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DIESEL RAILWAY TRACTION

The July issue of this RAILWAY GAZETTE *publication, illustrating and describing developments in Diesel Railway Traction, will be ready on July 1, price 2s.*

Should "Integration" be Abolished?

ENDEAVOURS to implement the requirement of the Transport Act 1947 that the British Transport Commission shall provide a properly integrated system of public inland transport have proved the most difficult of the tasks undertaken by the Commission. On previous occasions we have dealt with various aspects of this matter, but it has been left to Mr. Oscar R. Hobson, in a series of articles in *The Spectator* dealing with the nationalised industries, to expound the real answer. Recently when discussing State-owned transport, he expressed the view that the whole future of British inland transport "is likely to be bedevilled and jeopardised by this elusive and illusionary notion of integration . . . I am perfectly sure that we do not want any form of integration that gives the Commission the right either to choose the form of transport that we use for a particular consignment of goods, or so to adjust its charges as to make the efficient forms pay for the inefficient forms . . . My view is that we should get rid of "integration," wind up the Commission and let a reconstituted Railway Executive and London Transport Executive take full responsibility for running the main-line railways and London Transport respectively." That is a new approach to the problem of integration and one which, although it will not commend itself to many who have pinned their faith in the elusive benefits which they are sure will derive from the implementation of a term which, so far as it applies to transport, appears to defy definition, at least would have the practical advantage of eliminating a will-o'the-wisp. On the other hand, although there is a good deal of sound commonsense in various suggestions made by Mr. Hobson in his article, to which we may return on a later occasion, it is obvious that under a nationalised system of transport, if any benefit at all is to be derived, co-ordination of services must be pursued constantly by the responsible authorities. The only justification for placing by far the greatest part of inland transport under single ownership, must be the achievement of a more efficient and economic overall transport service, than was possible under private enterprise, with its multiplicity of ownerships. If that cannot be achieved, then nationalisation of transport must be judged completely to have failed. Mr. Hobson suggests that if, for national purposes, unremunerative railways are to be kept in operation, the proper course would be to grant a subsidy out of national funds. To do this, in our view, would undermine any possibility of achieving overall efficiency and economy of the national transport system. The granting of subsidies is far too easy an initial approach to meeting the problems of unremunerative undertakings and has far too grave ultimate implications to warrant its adoption in the case of any branch of so basic an industry as transport.

Unions Against Strike Action

THERE is now no chance of strike action by engineers in support of their claim for a £1 a week wage increase. Last week members of the Amalgamated Engineering Union overwhelmingly voted for arbitration and at the same time a similar decision was reached by the Transport & General Workers' Union and other unions. From this claim, initiated by the A.E.U. a year ago and turned down by the employers, arose the unfortunate decision of the Confederation of Shipbuilding & Engineering Unions to hold a ballot among its affiliated unions to decide on arbitration or strike action. Much importance attaches to the result of the A.E.U. vote, apart from the immediate result, for it may be taken as a sign of an increasing sense of responsibility among the rank and file of the union, which is long overdue, and a willingness to approach wage problems in a more practical way. The final result of the ballot will be announced on July 13 and the Confederation will then have to decide on its next step. Any strike in the basic industries at the present time, besides causing serious harm to the national economy, would certainly prejudice the prosperity on which better wage conditions can be based.

Railway Construction and Operation

THE Ministry of Transport requirements for passenger lines and recommendations for goods lines in regard to railway construction and operation have been revised and are now issued in booklet form.* These requirements, which were last revised in 1925, have been brought into line with modern practice, and the main revisions will be found under signalling, bridges and viaducts, permanent way, level crossings, and electric railways. They relate to new construction or reconstruction and alterations or additions to existing lines. The document has no statutory force in itself, but is issued for the guidance of engineers and others, and it is in effect a code of practice which experience has shown is desirable in order to maintain a high level of safety. While it may be said, generally, that

* "Requirements for Passenger Lines and Recommendations for Goods Lines in Regard to Railway Construction and Operation." London: H.M. Stationery Office. Price 1s. 6d.

compliance with the requirements is insisted on before the Inspecting Officer will recommend the Minister to approve new works, provision is made for modification where appropriate, and for relaxation or variation for light railways. It is of interest to recall that the first issue was made in 1858. This consisted of a pamphlet giving 14 items and it was sent to 79 railway companies. The new edition is a reminder of the diverse problems involved in modern railway construction and operation.

British Transport Commission Statistics

EASTER holiday travel chiefly explains the slight increase in British Railways receipts, during the fourth statistical period of the year, over the preceding period. Figures given in our last week's issue show that coal, mineral, and merchandise receipts declined; of these, merchandise receipts dropped 11 per cent.: but in view of very similar figures last year, the Easter holiday is probably the reason. Passenger journeys in March were 2 per cent. more than in March, 1949, and 15 per cent. more than in February; the main increases were in cheap-fare travel, and full-fare travel decreased by 11 per cent. over 1949. This is seen in March passenger receipts, which show declines in most items except cheap tickets, which were 47 per cent. more than in March, 1949, total receipts however, being much the same. The slight increase over 1949 in freight tonnages during the fourth period is due to increased coal and mineral traffic, which offset the drop in merchandise tonnages (13 per cent. in the Eastern Region). Operating statistics however continue to show increased efficiency under almost all heads.

Proposed Regrouping of Indian Railways

THE Government of India has released to the State Governments, Chambers of Commerce, railway labour organisations, and the public, a tentative scheme for regrouping the Indian railways. These bodies are requested to send their considered views to the Railway Board before August 31 next. The memorandum refers to the "haphazard" way in which the old company-owned railways grew up, and states that the rumps of the former North Western and Bengal Assam Railways left by the Partition of India cannot continue as self-sufficient units. With the integration on April 1 of the Indian State Railways the way to regrouping on a zonal basis is open. There are four main principles on which the plan is based; first, each new group shall serve a compact region; second, each shall be large enough to provide a headquarters organisation able to assimilate "up-to-date improvements in railway techniques and equipped with adequate workshop facilities and statistical, training, and research installations"; third, regrouping shall cause minimum dislocation in existing arrangements; and fourth, no dogmatic attitude will be adopted to the internal administration of each group.

Six Railway Zones in India

ZONE 1 ("Northern Railway") will include the Eastern Punjab Railway, the western portion of the East Indian Railway between Lucknow-Kanpur, and Delhi-Saharanpur, the metre-gauge section of the B.B.C.I.R. between Agra and Kanpur, and the Oudh Tirhut Railway west of Chupra. Zone 2 ("Western Railway") will comprise the remaining metre-gauge lines of the B.B.C.I.R., and the States Railways of Saurashtra, Jodhpur, Bikaner, Jaipur, Rajasthan, and Kutch. The broad-gauge lines of the B.B.C.I.R., and the major portions of the G.I.P.R. and Scindia and Dholpur States Railways, will make up Zone 3 ("Central Railway"). Zone 4 ("Southern Railway") will include the entire South Indian Railway, most of the metre-gauge of the Madras & Southern Mahratta Railway, and all the metre-gauge Mysore State Railway. The Nizam's State Railway, parts of the G.I.P.R. and M.S.M.R., and the Bengal-Nagpur Railway, *minus* the Bengal and Bihar coalfield area and the Howrah-Khargpur section, will form Zone 5 ("Eastern Railway"), and, finally, Zone 6 ("North Eastern Railway") will consist of the East Indian Railway east of Lucknow-Kanpur, the B.N.R. in the Bengal and Bihar coalfields and Howrah-Khargpur sections, the Oudh Tirhut Railway east of Chupra, and the Assam Railway (including the Assam Rail Link and Darjeeling-Himalayan Railway).

Colonial Engineering Problems

TWO years ago the Institution of Civil Engineers held a conference at which various subjects of importance to Colonial development were discussed and at which papers on engineering subjects were read. This proved so successful that the Institution decided to hold a similar conference every two years and the second of the series will open in London on July 3 and continue until July 7. The conferences are intended, primarily, to meet the needs of civil engineers engaged in the Colonial Engineering Service, though attendance is not confined to members of the Institution. This year, Mr. J. R. Farquharson, Deputy General Manager & Chief Engineer of the East African Railways & Harbours, will read a paper dealing with railway and port problems in East Africa, while at other technical sessions there will be contributions on the survey and design of low cost roads, harbours, research in engineering subjects, water supplies, and so on. Visits have been arranged to laboratories and works. At a later date it is intended to publish the proceedings of the technical sessions in full. The conference will be formally opened by Mr. James Griffiths, Secretary of State for the Colonies on July 4.

Timekeeping of "Enterprise" Expresses, G.N.R.(I.)

RUNNING non-stop between Belfast and Dublin twice daily in each direction, the "Enterprise" expresses of the Great Northern Railway (Ireland) are scheduled to cover the 112¾-mile journey in 2¼ hr. Statistics for the period January 2 to May 31, 1950, show that, despite fairly heavy permanent way checks, the running records must contribute in no small measure to the popularity of the service. During those five months, 13,453 first class and 50,493 third class passengers were carried, and a total mileage of 57,825 was run by the trains. In the table below are summarised timekeeping details of 129 trips by the 10.30 a.m. from Belfast and the return 5.30 p.m. from Dublin, and 128 trips by the 11 a.m. and 4.45 p.m. reverse workings.

Train	Occasions on time	Late arrivals		Analysis of total delays				
		Total	Daily average	Temporary p.w. slacks	Signals	Other causes	Net time gained	Involuntary stops*
		Min.	Min.	Min.	Min.	Min.	Min.	
Southbound :								
10.30 a.m. ...	87	182	1·4	459	16	34	327	4
4.45 p.m. ...	99	95	0·7	307	20	1	233	1
Northbound :								
11 a.m. ...	80	125	1·0	261	2	8	146	1
5.30 p.m. ...	47	323	2·5	448	3	14	142	4

* Five stops due to motive power failures and five to other causes.

Additional Stock for Iraqi State Railways

A CONTRACT for the supply of rolling stock for Iraqi recently completed by the Birmingham Railway Carriage & Wagon Co. Ltd., forms part of a five-year development plan embarked on by the Iraqi State Railways and referred to in our issue of July 2, 1948. This rolling stock, which is of standard-gauge design, will implement the services operating on the Baghdad-Tel-Kotchek line, which was opened for traffic on July 15, 1940, and it comprises third class coaches, upper class composite coaches with kitchen, air-conditioned and non air-conditioned upper class composites for day and night use, and luggage and brake vans. The bogies of the different classes of rolling stock are of similar design and are fitted with roller bearing axleboxes. Wilton carpets bearing the railway's monogram are fitted in the upper

class composite stock and all lettering on the exterior of all coaches is of stainless steel. Further details of the new coaches, together with illustrations, are given elsewhere in this issue.

Railway Uses for Reflective Material

INCREASING use is being made in the United States of reflective sheeting, which has been perfected to the extent that the latest development, known as Scotchlite, is claimed to reflect light up to 200 times as effectively as white paint. It is a material with a plastic base coated with glass spheres of microscopic size to the number of about 30,000 to the square inch. Each sphere serves as a tiny lens through which the light is reflected from the plastic backing. The reflecting material is supplied in sheet form, and the surfaces to which it is applied return the light directly to the source, with a minimum of diffusion on either side. Different varieties are made, from the wide-angle type, which reflects light beams received from any angle up to 85 deg. from dead head-on, to the smooth-surface type, which reflects light received from an angle up to 30 deg. from head-on. The uses to which these sheets can be put are many. Lineside signs, mileposts and gradient posts, speed restriction boards, and so on, can be coated so that they are illuminated by engine headlights, and, equally, level crossing or low bridge signs, so that they are made readily visible by car headlights. There are also innumerable publicity uses, such as railway names and insignia on locomotives, coaches and wagons, which can be thrown into strong relief when passing brightly lighted areas.

Developing the Illuminated Diagram

NEARLY 50 years ago the illuminated track diagram made its appearance at Acton Town—then called Mill Hill Park—in connection with the re-signalling of the District Railway, consequent on electrification. Not only did it dispense with a considerable number of separate track indicators; it brought all the track occupancy information on to the plan of the lines and signals, always provided in any case in a signal box, thus enabling the signalman better to concentrate on the work of handling the traffic. This device came to be recognised as standard in power signalling installations, but individual track indicators continued to be seen in manual type signal boxes, where frequently quite a number had to be used. The development of the idea involved in the illuminated diagram in the variation known as the eye-ball type, obtained favour for such work, however, and was met with also in some power installations. As with other signalling devices, time brought gradually improvements of detail and the "normally dark" system has come into favour. In this issue will be found details of more recent developments, claimed to offer appreciable advantages over earlier practice.

An Unfastened Van Door

THE accident which took place on September 30, 1949, at Mangotsfield, when a fireman, looking over the side of his cab, received fatal injuries from the door of a banana van which had swung open, was inquired into by Mr. J. A. Sinclair, who found that the van had apparently been interfered with by some unknown person who had failed to secure the doors properly afterwards. Nobody saw anything wrong with the van while the train in which it was included was being dealt with just before the collision, but the door subsequently opened when the vehicle came to a stand on a curve. As will be seen from our summary of the inquiry in this issue, members of the staff had been known to open the doors of banana vans in search of fruit overlooked during unloading, and the hope is expressed that active measures will be taken to deal with any tendency to tamper with these vehicles. Mr. Sinclair also recommends steps being taken to see the doors are secure before they are drawn on to a main line. In just over twelve months three enginemen lost their lives through coming in contact with van doors not properly secured.

Railway Equipment Makers' Markets

THE British locomotive and carriage and wagon building industries have been working at high pressure since they reverted to normal production after a period of munition manufacture during the first part of the recent war. Since the cessation of hostilities, there has been a very heavy demand for their products from many countries which have been faced with the necessity for making good the backlog of railway equipment renewals which accumulated during the war, and which was accentuated in many cases by the exceptional calls made on motive power and rolling stock of all kinds during the period of emergency. At the end of the war, British railway equipment manufacturers were faced with a great mass of orders, far beyond their capacity of speedy fulfilment. Pressure on their production resources still continues and a stage has not yet been reached at which deliveries of contracts placed can be given as speedily as the customer would desire. Nevertheless, a great deal of progress has been made in the filling of contracts, which at one time stretched into the dim future, and a position has been achieved at which it is possible to tender for orders and to give a date for completion which, although it may be anything up to two years, or even more, ahead in some cases, can be taken as a reasonably close approximation of the date at which the customer will receive the products.

In a recent issue of *The Financial Times*, a survey was given of the expansion which has occurred in the railway equipment industries of this country, so far as they are concerned with locomotive and carriage and wagon building. This points out that more than half the output is exported, principally to countries within the Commonwealth, and that although there has been some revival of competition this year, in particular from Germany, so far the home industry has held its own. Locomotive production is shown as having increased by 140 per cent. on pre-war, and carriage and wagon building is now 75 per cent. greater than in 1938-39. The total annual output of the three products is now worth some £32,000,000.

Constant endeavours are being made by all the builders to achieve greater economy and production costs in an effort to offset the inevitable increases in costs, arising principally from higher labour and materials bill, which have occurred. In the locomotive building industry in particular, endeavours are being made to induce overseas railway administrations to accept agreed standards for a number of items. It is felt that by doing so, not only would it be possible to quote lower prices, but that in many cases delivery would be expedited to the advantage of both railway administration and manufacturer. As *The Financial Times* points out, one of the principal difficulties which militates against economy in production costs is the wide variety of gauges that has to be catered for in constructing equipment for home and overseas railway systems. Nevertheless, there is a considerable scope for a greater standardisation of locomotives and carriages and wagons, and in particular in the various parts and accessories which are incorporated in them, and it is largely in this direction that it is hoped to achieve economy.

Great Britain's best railway equipment customer is South Africa, which last year absorbed 28·9 per cent. of the total British carriage and wagon output of £21,000,000. Southern Rhodesia was second, taking 17·3 per cent., followed by Nigeria, 11·6 per cent., Argentina 10·6 per cent., and Egypt 8·5 per cent. The total output for both the home and export markets of complete carriages was valued at £6·8 million, or 32·5 per cent. of the total 1949 production; wagons accounted for £12·4 million or 59·1 per cent. Miscellaneous ironwork was worth £1·8 million, or 8·4 per cent. of the total; locomotives of all types manufactured in 1949 were valued at £11 million.

The British locomotive manufacture industry still suffers from the disadvantage, as compared with its competitors in most other countries, of lacking an assured

home market for its products. The British railways place orders with the private manufacturers only to the extent that they are unable to meet their own needs, and they maintain large works, which produce most of their own motive power as well as dealing with maintenance and renewals to their locomotive stock as required. Numerous endeavours have been made over many years to induce the British railway authorities to place long-term contracts with the private builders. This would enable the latter to plan their production programme well ahead and would strengthen their competitive position in the export market. For the last few years this matter has become less urgent than it was between the wars, because of the very heavy pressure of overseas orders which the British manufacturers have received. With the return of more normal times, however, it is not unlikely that the need for some stabilising influence of this kind will be felt again. Whether a nationalised railway administration will prove more open to conviction that it should adopt measures of this kind to assist the export trade than did the boards of the railway companies under private enterprise remains conjectural. There can be no doubt of the value which such assistance would be to private builders.

Trade Union Discipline

IN recent years one of the most disturbing elements in industrial relations has been the prevalence of the unofficial strike. In railways, in particular, and in transport in general, they have become almost a monotonous problem both for trade union leaders and for management. The effect of these sporadic and almost invariably ill-based outbursts has been disruptive not only to the efficiency of the services provided by the transport agency, but also to the authority of the men's leaders and to their prestige as negotiators on behalf of the great body of their members.

The British railways and transport in Ireland—both North and South of the Border—have had a good deal of experience of unofficial strikes, but they have been confined by no means to transport. Ireland has achieved a reputation for producing the unexpected, and recently two Irish unions have demonstrated their powers in this direction by the methods they have adopted in relation to an unofficial strike, which, although small enough in itself in the number of men directly involved, yet had wide repercussions. About three weeks ago, a small group of men at the Dublin gasworks sought to enforce a claim for higher pay by indulging in an unofficial withdrawal of labour; negotiations were already in progress between the gas company and the unions, but as a result of the withdrawal of labour, Dublin's supply of gas was interrupted for some days. The Workers Union of Ireland and the Irish Seamen & Port Workers Union—the two organisations of employees affected—not only lost no time in verbal condemnation of the strike; the unofficial strikers were made subject to union discipline. One member was expelled from the Workers Union and the others were fined according to their degree of participation in the strike. The General Executive Committee of the Workers Union, in announcing its decision, pointed out that the strength of trade unionists was their ability to act as an organised, disciplined body of workers. Unofficial strikes were a menace to that power and were the negation of democratic practice, because they were frequently acts of individual will perpetrated without the consent of the majority. The Executive Committee of the Irish Seamen & Port Workers Union issued an appeal to other unions to establish a principle that a man expelled from membership of one group for proven offence should not be accepted by any other group.

This last point is by far the most important; there can be no doubt that the constant embarrassment of British and other trade union leaders, caused by unofficial strikes, has given rise to a desire to impose disciplinary action on the ring-leaders. British trade union executives are only too well aware of the undesirability of these outbreaks and of their general effect on the standing both of the general trade union movement and on the particular organisation involved. So far they have lacked the courage to take steps against delinquent members, largely because of their knowledge that to do so would drive the offender into the membership of a competing trade union. This is particularly the case, perhaps, among certain grades of English and Irish railwaymen. It is a weakness of the trade union movement in this country that not all the unions affiliated to the Trades Union Congress or even to the powerful, but overgrown, Transport & General Workers Union, can be relied on to act in unison when individual advantage is at stake.

If the trade union movement is to re-establish its position as negotiator on behalf of the great body of workers that it represents, it must take steps to ensure discipline within its own ranks. A lead might be given by the principals of the largest unions in this respect. It is idle to expect individuals or small units of a union to give complete loyalty to a movement when they see dissension at the top on matters of major policy. The National Union of Railwaymen, for example, could well give a lead in this respect. The individualist line that it has pursued in recent years is not best calculated to promote the best interests of trade unionists as a whole.

London Fares Inquiry

THE inquiry by the Transport Tribunal into the London Area (Interim) Passenger Charges Scheme has now entered the concluding stage. This scheme, which the British Transport Commission seeks authority to introduce on October 1 next, covers the entire London Transport Area, the suburban services of British Railways in the area served by London Transport buses, and the London, Tilbury & Southend line. Briefly, the object of the scheme is to remove a number of fare anomalies and to apply in these areas a new standard scale based generally on a rate of 1·25d. per mile, which will mean an increase in ordinary single fares on London Transport services, other than coach fares, but at the same time will reduce the cost of travel for a great many passengers on Railway Executive services in the London area. Season tickets on British Railways will in the main be cheaper.

Early in the proceedings statements were submitted to the Tribunal showing the gross estimated working profit of the B.T.C. from all sources this year to be £38·1 million. This includes £17·8 million from the railways and £2·4 million from London Transport. From a full year the Commission expects £10·5 million additional income from higher freight charges and £3·2 million in respect of the proposed London area scheme. These items total £13·7 million, which, deducted from the expected 1950 deficit of £15·1 million, leave a loss of £1,400,000 on the year. Thus, even without the burden of the extra tax on oil and petrol, the B.T.C. would not have broken even. This extra tax will probably be costing London Transport alone some £1,125,000 a year and the abolition of petrol rationing is expected to reduce the revenue of the whole undertaking by not less than £1,000,000 in a full year. Mr. R. H. Wilson, Comptroller, British Transport Commission, stated in evidence that the cost of carrying the public on services in the London area was greater by £3·5 million than the amount which the public now paid for those services. Higher coal charges will also add to costs.

The inquiry has taken up 24 days so far and the scheme has been opposed by no fewer than 109 organisations representing 10 million persons in the area. Mostly it has been the financial policy of the B.T.C. rather than details of accountancy calculations or methods of operating which have been called into question. The estimated increase in revenue of £3·2 million represents a substantial increase in fares which is most noticeable in the new scales of London Transport single fares and in the early morning return fares which are to replace workmen's fares. This has been strenuously opposed by the trade unions, but, referring to the frequent suggestions that a subsidy should be granted to the B.T.C. to solve its financial problems, Mr. Wilson has rightly stressed that it was the policy of the

Commission—as it is also the intention of the Transport Act—that it should not be placed in the position of receiving a subsidy, and that any undertaking working on a subsidy was likely to be unhealthy.

British Employees of Argentine Railways

AFTER prolonged negotiations between the British Embassy in Buenos Aires and the Argentine Minister of Transport, which have lasted nearly two years, those British subjects who elected to remain in the employment of the Argentine railways after the lines of the British companies were transferred to the Argentine Republic have been awarded five-year contracts, and a decree to this effect was issued in Buenos Aires on June 21. The number of employees involved is about 300. The decree gives effect to a special arrangement under which contracts for a five-year period from March, 1948, are to be distributed to all British railwaymen now serving with the Argentine railways, and under which compensation will be paid to those who, since the transfer of the railways to the State, have been dismissed without reasonable cause. The decree adds that British employees will enjoy the same privileges as Argentines and that if they are dismissed they will be remunerated in accordance with Argentine laws. On the termination of a contract the Minister of Transport will review the situation of employees who are approaching pensionable rights.

The terms of the agreement relating to the British-owned railways in Argentina, which was signed on February 13, 1947, as recorded in our issue of March 14, 1947, included a provision that the staff whose salaries as at June 30, 1946, did not exceed 1,000 pesos would be retained in their positions, and the employment of persons in this category, whether or not they had written contracts, would be respected by the Government in the exercise of their rights. These contracts, unfortunately, failed to materialise, and in the House of Commons on April 4, 1949, Mr. C. P. Mayhew, Under-Secretary of State for Foreign Affairs, pointed out that this was in contravention of the agreement signed between Sir Montague Eddy and Senor Miranda on February 13, 1947. Further representations were therefore made to the Argentine Minister for Foreign Affairs. The new agreement will be welcomed by all parties and it is to be hoped that a lasting settlement of long-standing difficulties on both sides will result.

Railway Expenditure and Volume of Traffic

MR. W. A. TIMMERMAN has published a thesis, which he submitted for the Degree of Commerce at the University of Pretoria, on the subject of railway expenditure and the volume of traffic.* His aim was to controvert the contention of the South African Railways Administration that low rates charged on certain traffics were justified because a large part of the railway expenditure represented constant costs which would not vary with the volume of traffic. After a laborious analysis of South African Railways expenditure Mr. Timmerman concludes that over a long period the so-called "constant costs" become variable. He also combats the generally accepted theory that in ordinary course a railway has spare capacity, which could be employed usefully if additional traffic were forthcoming. So he considers that the rate structure of the South African Railways should in the main be based on the costs of transport calculated separately for each kind of traffic.

In support of his views Mr. Timmerman quotes several American writers on railway economics, but does not examine the performance of the U.S.A. railways between 1929, their pre-war year of great prosperity, and 1944, when they handled an all-time record traffic. In 1929 the U.S.A. railway system was developed fully and worked 450,000 million ton-miles over 430,000 miles of track. Then came the slump in trade, and traffic fell away until the effects of the second world war were felt in 1940. Ton-mileage in that year rose to 375,000 million and went on growing until a new peak of 741,000 million was reached in 1944. This record was made on 398,000 miles of track, 31,000 less than the railways had in 1929, and represented an increase of 65 per cent. Over the same period of 15 years, passenger movement was 200 per cent greater, but the amount invested in road and equipment was less than 5 per cent. higher. Rates and fares were not increased during the war, while the average revenue per ton-mile and passenger-mile were below the 1929 level, though unit costs of labour and materials advanced sharply in 1944. Only the unprecedented volume of traffic enabled the U.S.A. railways to keep their operating ratio down to 67 per cent., as compared with 72 per cent. in 1929.

The great reserve capacity of the U.S.A. railways, after helping to win the war, was used in 1947 to carry a record peacetime traffic, showing that rail movement can be intensified to deal with an expanding volume of business in a way that no other form of transport can approach. This reserve power was created largely in the ten years from 1921 to 1930, when $7,728 million were spent on capital additions and betterments to roadway, structures, and equipment. In the next ten lean years from 1931 to 1940 only $2,760 million were spent, but in the nine years 1941 to 1949, gross capital expenditure amounted to $6,668 million. A record expenditure of $1,312 million was incurred last year, when prices were high with equipment costing twice as much as it did 20 years ago. These figures represent actual money outlay, without any allowance for "retirements."

About three quarters of the 1949 expenditure went to provide rolling stock—1,865 locomotives (all but 57 being diesel-electric units), 946 passenger coaches, and 84,700 freight wagons. The American practice is for the railway company to put down 20 per cent. of the purchase price of the rolling stock and to finance the balance by assuming liability for equipment trust certificates, maturing in 10 or 15 annual instalments, which are sold on the basis of competitive bids, with an interest rate set accordingly. In one or two recent cases the annual average cost of the proceeds to the railway company was around 2½ per cent. There is a ready market for these certificates, but investors will not advance money for general railway purposes, so that the companies have to finance permanent way and structural works from revenue or from their own resources. The low rate of return on railway property investment—under 3 per cent. in 1949—influences the public to place its spare funds with more profitable undertakings.

The Association of American Railroads asserts that the real hope for the railway industry lies in its being dynamic and progressive. It must provide first rate services at the lowest possible cost, and therefore needs a continuous supply of capital to refresh its property and carry out schemes designed to secure traffic, to reduce operating costs, and to increase net revenue. The truth of these views is proved by the predicament of British Railways, caused by the Treasury's zeal to restrict capital expenditure. Between the amalgamation of 1923 and 1938 the four groups found on an average £5,500,000 a year for capital improvements—a net amount after deducting the value of assets displaced. The main-line railways were consequently in a good physical state when they came under Government control in 1939. Now, after five years of peace, British Railways have not cleared off arrears of maintenance, which accumulated during the war, and are short of passenger and freight rolling stock. Unless more money is spent on their property, our nationalised railways may become before long static and unenterprising. The policy pursued by successive governments, during the war and since, has crippled their reserve strength and it is questionable whether they could cope readily with any large increase in traffic volume that happened to come along in the near future.

We are glad that Mr. Timmerman's painstaking study of South African conditions has afforded an opportunity of stressing the importance of injecting adequate capital into any worth-while railway system to keep it up to concert pitch.

* "Railway Expenditure and the Volume of Traffic." By W. A. Timmerman, D.Com. London: The Locomotive Publishing Co. Ltd., 88, Horseferry Road, S.W.1

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Summer Timetables

June 8

SIR,—I do not think the new London Midland Region timetables are quite as bad as Mr. Dowler suggests in your June 2 issue. The fault is that the SX and SO qualifications are printed at the tops of the columns instead of in the columns themselves, so that for a local train near the bottom of a page they may be missed at a casual glance. Otherwise, they are reasonably clear, and the suburban tables in particular are shown much more fully than before.

No matter how simple the timetables, most people will rely on the enquiry offices and local alphabetical publications, but the present timetables can be easily understood by anyone who follows the instructions at the beginning.

Surely the purpose of the public book is not to enable persons to understand the running of a particular express, but to tell them what time they have to leave A to get to B at a certain time. For the "Pines Express" this is summarised simply in Table 16.

To suggest that services during the week should be decelerated to tidy up the timetables would lead to inconvenience, as traffic conditions differ from those on a Saturday. To examine the particular case Mr. Dowler has in mind—supposing the 9.33 a.m. from Bradford (the "Devonian") is retimed in the public book to reach Bristol at 4.10 p.m. on weekdays instead of 4 p.m. If it arrives at 4 p.m. people who turn up at 4.5 to meet their friends off the train will be justifiably annoyed. If it arrives at 4.10 everybody is worse off than before.

The "Devonian" would have to continue to Torquay at its Saturday times to keep Table 184 the same throughout the week. Therefore, the 4.15 local from Bristol to Taunton would have to leave at 4.8, which would break the "Devonian" connection and also probably annoy Bristol business people.

Leaving Bristol at the Saturday time of 4.20, the express would still have to call at Weston-super-Mare (the relief which stops there on Saturdays would not be running) and so would not reach Taunton until, say, 5.39 p.m. (19 min. later than now and 7 min. later than the present Saturday timing). On weekdays the 19 min. difference would mean later running of the 6.40 p.m. from Dawlish Warren to Plymouth and the 3.30 p.m. Paddington-Penzance express would have to be slowed by 5 or 10 min.

If this principle were extended to every train in the timetable the result would obviously be a wholesale worsening of the service, and no real benefit to anyone.

Yours faithfully,

D. J. O. TERRY

70, Grange Gardens, Pinner

Railway Efficiency

June 2

SIR,—Although I can understand one not used to handling statistics correctly making the assertion that "average length of haul has no bearing whatsoever on a statistical unit based on tons carried over distance in time," I am surprised at Mr. Frederick Smith doing so, in his letter in your issue of June 2, particularly when conditions are so different in the two countries compared.

In the first place, train engine hours include time between trips awaiting return train loads and this factor is bound to be a greater proportion of the total when the average haul is short. Similarly, there will be a greater proportion of total time spent at or near terminals.

To quote more fully from *Hansard* (May 10, 1950, Col. 529/30) than Mr. Smith did, the Minister of Transport was quite correct in saying "the length of haul in the United States is 424 miles compared with 72 miles in the United Kingdom. That emphasises the difficulty of comparing fares and railway operation and figures in a country like the United States, with its immense distances, with railway operations in this country, where the distances are relatively short."

Density of traffic is greater in this country:—

Railway	United States	Great Britain (excl. London Transport)
	Miles	Miles
Originating tonnage	1,345 (British)	276
Passenger journeys	643	996
"Road" mileage	227,000	20,000

and taking into consideration the peculiar operating conditions of the short haul in this country, it is bound to affect the train engine hour figure.

I should also like to query Mr. Smith's assertion that the "throughout" wagon load figure is obviously more accurate than the wagon load at starting point figure. It is as important to load a wagon to its greatest capacity whether it is moving 10 or 60 miles, particularly in the case of coal and heavy minerals where so much time is used in loading and unloading. The "throughout" load does not reflect traffic removed *en route* as is often thought—for this is comparatively unimportant even in the case of merchandise—but the artificial weighting given to traffic moving the longer distance, as the following illustration shows:—

Coal Traffic

	Wagons	Tons	Miles	Wagon miles	Ton miles	Av. load Tons
(1)	2	40	60	120	2,400	20
	2	20	10	20	200	10
	4	60		140	2,600	18·6
	Average load 15 tons					
(2)	2	40	10	20	400	20
	2	20	60	120	1,200	10
	4	60		140	1,600	11·1
	Average load 15 tons					

The average load is 15 tons, yet in the first case some statisticians would have us believe it is raised *en route* by 3·6 tons. In the second case, there is an apparent loss of coal of 3·6 tons per wagon—pilfering of coal may occur on the railways, but not in this way!

Yours faithfully,

B.J.

Mill Hill

British Railways Workshops Economies

June 24

SIR,—An editorial in your June 23 issue quotes the *British Railways Magazine* as claiming that economies in workshop costs are being effected through railway unification. The statement would be more convincing if it were supported by figures. We know that in the first quarter of this year the U.S.A. railways spent $391,000,000 on the maintenance of equipment, compared with $416,000,000 in 1949, a reduction of $25,000,000 or nearly 6 per cent. Why should British Railways be content with vague generalities?

The article, which gave you a text, contains one statistical comparison. In bold type we are told that "The number of locomotives under or awaiting repair has been steadily reduced. In January, 1948, they totalled 1,489, or 7·29 per cent. of the net operating stock. By 1949 this had been reduced to 990 locomotives, or 5·10 per cent., a fine achievement of which the workshop staff may well be proud."

This panegyric takes no account of the fact that the figure of 990 is for the last four-week period of 1949, an abnormal one extending to January 1, 1950, and thus including the year-end holidays. In the previous period to December 4 the number of locomotives under repair was 1,071. In January, 1950, the number was 1,070 and in April 1,057, both figures representing 5·5 per cent. of a net operating stock which fell gradually from 19,386 in

December to 19,192 in April. The fortuitous nature of the December result is confirmed by the record of running shed repairs, which were unusually low towards the end of last year and have been considerably higher since.

There is the further point that the quality of the locomotive stock has been improved consistently since January, 1948. Recently the rate of betterment has been accelerated. Between November, 1949, and April, 1950, some 210 new locomotives have been installed and 367 obsolete engines withdrawn from service. The surprising thing is that the number of locomotives out of action at workshops and running sheds remains at 18 per cent. of the net operating stock or thereabouts, but the situation will not be changed by indiscriminate praise or blame directed at any section of the staff.

Yours faithfully,

R. BELL

Frognal, N.W.3

Integration

June 20

SIR,—According to Chambers's Etymological Dictionary, "to integrate" is "to make as a whole." That being the exact purpose of the Transport Act, it seems futile to attach an unnecessarily complicated meaning to the word, and bewildering, if not discouraging, to those who are trying to put integration into practice.

Integration must be at all levels of the transport industry, and not merely at the top. The six Executives (one of which has no direct transport responsibility) will always be justified by virtue of the highly specialised nature of the undertakings they control; they are already, in effect, integrated into the British Transport Commission.

It is the last-named that must increase its scope, and considerably. One visualises, as an ultimate, a uniform geographical organisation of Executives and B.T.C. alike into regions, divisions and sub-divisions, each with its own officers and staffs. Thus, the B.T.C. personnel would be the transport men suggested in your editorial in the June 9 issue, although their familiarity with the different arms of transport need consist of little more than a knowledge of the services which are offered within their own territories. Subject to the dictates of policy from above, their job would be to decide how goods and passengers were to be carried from point to point, according to the requirements of efficiency and sound economics. That would leave the Executives to attend simply to the business of carrying, operationally independent but commercially fused within the twin organisation of the B.T.C. from local to national levels.

Inevitably, freedom of choice is subjugated to an all-powerful central transport authority, but would that really matter, at least for goods? Does it ever strike us to question whether our mails are carried by road or rail? So certain are we of the arrival of our letters at their destinations that the idea is ludicrous. So it must be with transport, once it is completely publicly owned. We should go, not to the nearest stationmaster or road haulage depot manager when wanting to despatch goods, but to the local Transport Officer.

Passengers, being human, would settle their own destinies by the practical exertion of public opinion. Here, only road and rail are involved, but the integration of these two is, undoubtedly, the most difficult. Nevertheless, the public relations (or canvassing) side of the B.T.C. must keep a steady finger on John Citizen's pulse, and so be able to issue general directives to the Executives, again locally and nationally, whose own commercial representatives would, by constant liaison, ensure that road and rail were complementary, and not competitive. There will ever be ample room for both.

There is a long way to go before integration is achieved. It is impossible of accomplishment until the Transport Act is amended to allow the B.T.C. to descend from its aloof position of ownership to a broader working level alongside its Executives, as I have tried to outline above. Then, truly efficient and economic transport will be in sight—and, incidentally, the vexing question of "C" road carriers' licences will be settled for all time.

Yours faithfully,

PETER COLLINS,
Stationmaster

Station House, Barnham, Norfolk

Publications Received

A Survey of Electrical Insulation Practice. By Max A. Faucett, Constantine Houpie, and George E. Leibinger. Published by the University of Illinois. 9 in. × 6 in. 96 pages and folding table. Price 70 cents.—This is No. 57 in the series of bulletins published by the Engineering Experiment Station of the University of Illinois. After an exhaustive survey of practice relating to motors, generators, transformers, and associated power equipment, the authors make certain recommendations for improvement. They feel that the present method of classifying insulation is not sufficiently informative considering the variety of operating conditions that have to be met, and suggest a modified system that would show at once the ability of a machine to withstand exceptional moisture and temperature, for example. This would be achieved by introducing a series of "premium" letters, each representing some exceptional condition, and using them singly or in combination to classify equipment designed to operate in special circumstances. Together with this would go a standard classification covering under a minimum number of headings the requirements of equipment used for general purposes. It is further recommended that some of the very numerous varnishes now available for insulation purposes should be eliminated, and the classes retained chosen so as to fall into clearly defined groups. Apart from the interest of their conclusions and discussions of insulating materials the authors have provided and tabulated a wealth of data that will be valuable to designers when selecting appropriate combinations of materials for their own purposes.

The Railwaymen's Year Book, 1950-51. London: Railwaymen's Publications Limited, Vernon House, Sicilian Avenue, W.C.1. 8½ in. × 5½ in. 120 pp. Illustrated. Paper covers. Price 2s. 6d.—The latest edition of this information and reference book includes illustrated articles and features on a variety of subjects likely to be of interest to railway staff. They range from sections on training and education, and rates of pay, to permanent way, "crack trains," and holiday and gardening information. Details are given of the Members and Chief Officers of the British Transport Commission and its Executives, and of the railway Regions, as well as the trade unions, associations and organisations. The foreword this year is by Sir Eustace Missenden, Chairman of the Railway Executive, who stresses the importance of consultation and co-operation between management and staff at all levels in the industry; this, its publishers claim, is one of the principal aims of the book.

Quiz on Railroads and Railroading. Washington 6, U.S.A.: Association of American Railroads, Transportation Buildings. 7 in. × 10 in. Paper covers. Gratis.—The revised seventh edition of this booklet, despite repetition of some doubtful statements as to train speeds made in the previous edition, which we drew attention to at the time, will greatly help amateur railway enthusiasts and all who seek historical and statistical data on American railways in a compact and accessible form, and provide them with a good index.

The Isle of Man for Happy Holidays.—Under this title the Isle of Man Publicity Board, whose London office is at 119, Grand Buildings, Trafalgar Square, W.C.2, publishes, gratis, a well-illustrated official guide book containing much of interest to both visitors and intending residents. Other literature issued by the board includes a list of holiday accommodation and an attractive folder with a pictorial map of the island.

THE SCRAP HEAP

The Caterpillar Train

Millions of caterpillars slowed trains near Fredericton, New Brunswick, to walking pace. Railwaymen had to sweep them from the track.—*From "The Daily Graphic."*

Premier on Footplate

Mr. St. Laurent, Prime Minister of Canada, was at the throttle of the locomotive that hauled the Grand Trunk Railroad "International Limited" into Chicago on its 50th anniversary run from Montreal on June 5. While his wife, daughter and son-in-law rode in style in a special coach, the Prime Minister sat in the cab of the locomotive in overalls and "hogger's" cap.

Decrease in Civil Service Staffs

A statement showing the civil staffs employed in Government Departments on April 1, shows that, excluding the Post Office, the Defence Departments, and non-industrial civil servants on defence work in the Ministry of Supply, the total was 325,405, a decrease of 4,914 compared with the total on January 1. Much of this decrease is due to a reduction of 4,236 at the Ministry of Food.

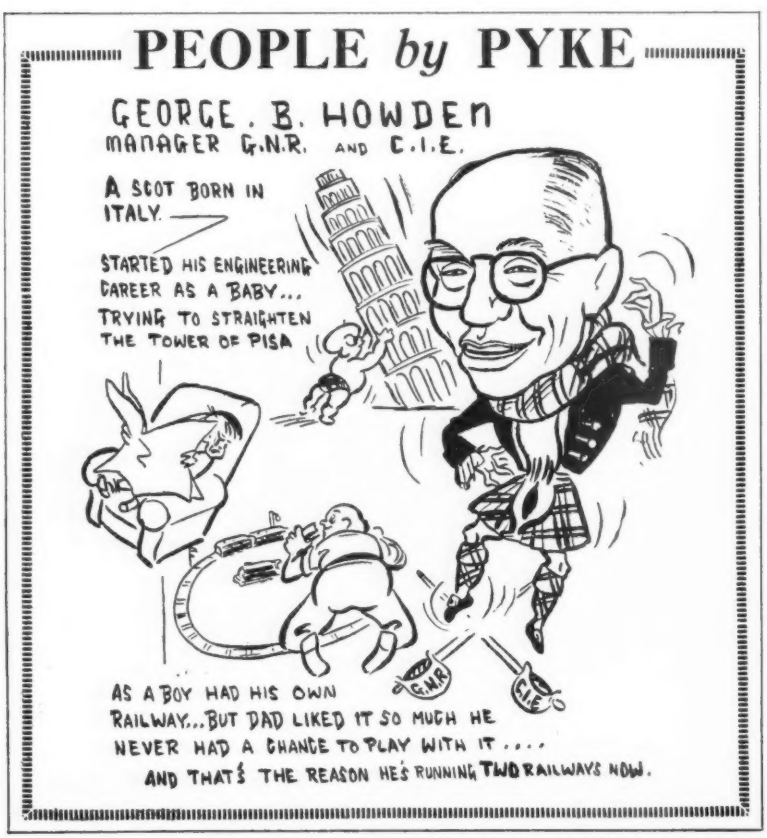
The staff of the Revenue Departments showed an increase of 2,630, due to the inclusion for the first time of Rating Valuation staff transferred from local authorities. There was a decrease in the staff of the Post Office, but this was masked by the incorporation for the first time of 3,622 staff of Cable & Wireless, Limited, bringing the total number employed by the Department to 249,869.

"Royal Scot" Bell for York Museum

As London Midland Region locomotive No. 46100, *Royal Scot*, with others of the "Royal Scot" class has now been fitted with the latest type of taper boiler, it cannot carry its famous bell on the front, and the trophy has accordingly been sent to the York Railway Museum for preservation, with the nameplate previously on the smokebox door.

The bell was fitted to the *Royal Scot* to comply with American railway regulations when the locomotive went to Montreal in 1933 on an exhibition tour of the U.S.A. and Canada. It was displayed at the Chicago Exposition, made a goodwill tour over 11,000 miles, and was inspected by more than 3,000,000 persons.

The inscription on the *Royal Scot* bell reads:—"Presented to locomotive *Royal Scot* by the Canadian Pacific Railway in commemoration of its tour of Canada and the United States, May-November, 1933."


PEOPLE by PYKE
GEORGE. B. HOWDEN
MANAGER G.N.R. AND C.I.E.
A SCOT BORN IN ITALY.
STARTED HIS ENGINEERING CAREER AS A BABY... TRYING TO STRAIGHTEN THE TOWER OF PISA
AS A BOY HAD HIS OWN RAILWAY... BUT DAD LIKED IT SO MUCH HE NEVER HAD A CHANCE TO PLAY WITH IT....
AND THAT'S THE REASON HE'S RUNNING TWO RAILWAYS NOW.
G.N.R.
C.I.E.

[Reproduced from the "Sunday Press," Dublin

Hunting by Train

A fox ran in front of a train at Alsop-en-le-Dale, Derbyshire, and was killed. The local Fox Destruction Society paid their usual reward to the engine-driver.—*From the "Daily Mail."*

First British Railway to be Closed

On July 1, 1850, the Newmarket Railway was closed. This was probably the first standard railway in the British Isles to be closed to all traffic.

Kitchener Centenary

The centenary occurred on June 24 of the birth of Lord Kitchener, who in 1897-99, during the campaign against the Mahdi, was instrumental in building the military railway from Wadi Halfa to Khartoum, the beginning of the existing Sudan Railways.

Southern Region Alliteration

Although cases in which the names of two or three consecutive stations have the same initial letter are by no means unknown, extensive alliterations of this kind are rare on British Railways. A good example was to be found on the main line of the Southern Region from Waterloo to Portsmouth, where the names of three successive stations, Walton-on-Thames, Weybridge, and West Weybridge, all began with the letter "W." The alliteration was resumed with Woking and Worplesdon, after a break at Byfleet. On June 5, however, Byfleet became West Byfleet, and the sequence of initial "Ws" on this line now extends to six station names, within distance of less than ten miles, and probably is unique, both on the Southern and other Regions.

Tailpiece

AS we travel, so we progress, as they said in days of yore,
And we praise increased production which is better than before;
To acclaim a better service is quite proper in our view,
So we give a hearty cheer to those who run the Bakerloo.

In the morning, very early, trains are coupled up for town,
Later on, they start uncoupling, which is breaking coaches down;
So the shopper and the tourist find a short uncoupled train,
But the tired homeward worker finds it coupled up again.

This of course is very technical; the Bakerloo sustains
A midday doubled service with its short uncoupled trains;
So coupling, and uncoupling, then recoupling with speed,
Makes two trains run instead of one to meet a special need.

A. E. C.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

VICTORIA

Passenger Amenities

A free basinette service for mothers travelling with babies has been introduced on the "Overland" express and Melbourne-Mildura trains. A basinette has been placed in one of the sleeping cars of each train and is carried nightly in each direction between Melbourne and Adelaide, and Melbourne and Mildura. It has a light, mild-steel frame covered with fabric to support the child, sitting or sleeping. The frame can be folded when not required.

Another amenity for small children has been introduced on the "Spirit of Progress." Children up to the age of six or so are given, free of cost, a booklet illustrated in colour—"Our Train Book." A new saloon-type experimental suburban car being built at Newport workshops provides for extra space for prams.

WESTERN AUSTRALIA

Garden Competition

The Railways Commission has instituted a gardening competition among stations and employees occupying departmental houses. The long, dry summer has affected the entries but the winter is expected to show some good results. The Commission has also reintroduced a scheme of supplying fruit trees and ornamental shrubs to departmental properties on request from the occupants. This idea produced excellent results in past years, and it is hoped that many employees will take advantage of this opportunity of brightening the surroundings of their homes.

Locomotives and Rolling Stock

The Government has approved the Commission's recommendation to call tenders for the construction and supply of 107 new coaches. These coaches, which comprise 40 sleepers, 65 country sit-up coaches, and two lounge-cars, form part of the Department's rolling stock rehabilitation programme and will replace existing coaches which have reached the stage where high maintenance costs warrant their retirement.

This approval follows a recent decision of the Government to call tenders for 4,160 goods wagons comprising open high-side wagons, bogie, and single louvred vans, flats, sheep and cattle wagons, open lowside, and special wagons for bulk wheat, refrigerator type, etc., and for 48 main-line diesel-electric locomotives and 18 diesel shunting locomotives.

The diesel-electric locomotives are intended mainly for use in the drier areas where suitable water for locomotives is a major problem. They are expected to reduce working costs and provide better conditions for drivers and firemen. By reducing water consumption they will also increase the availability of water for other purposes, a matter which will be of prime importance as population increases. They will also reduce water haulage during summer months, which in recent years has reached great proportions—during the recent summer 2,700,000 gal. per week.

The new main-line diesel-electric locomotives will supplement the 35 "PM" class and 60 "W" class steam locomotives now in course of construction and delivery from British manufacturers.

CANADA

C.N.R. President Tours West

The so-called "over-building" of Canadian railways will in due course be fully justified, stated Mr. Donald Gordon, President of the Canadian National Railways, on his return from an inspection trip of some 5,000 miles to Western Canada and the Pacific Coast. Mr. Gordon said he had confidence in the continuing expansion of Canadian economic development and in the ability of the railways to provide the transport facilities essential to national prosperity. "I was impressed with the tremendous industrial and other expansion that has taken place, and with the immense possibilities that lie ahead of us. I found it an exhilarating and inspiring experience to see Canada from the railroad bed up," he declared.

Mr. Gordon said that he had taken every opportunity to meet the railwaymen in their workshops, at terminals, along the line and in the offices. He visited the flood-stricken areas of Winnipeg and with civic and railway authorities flew over the city and district. Before going on to western Canada, he travelled over the main line between Montreal, Toronto, London, and Windsor, and was given a warm welcome in his new capacity as President.

ARGENTINA

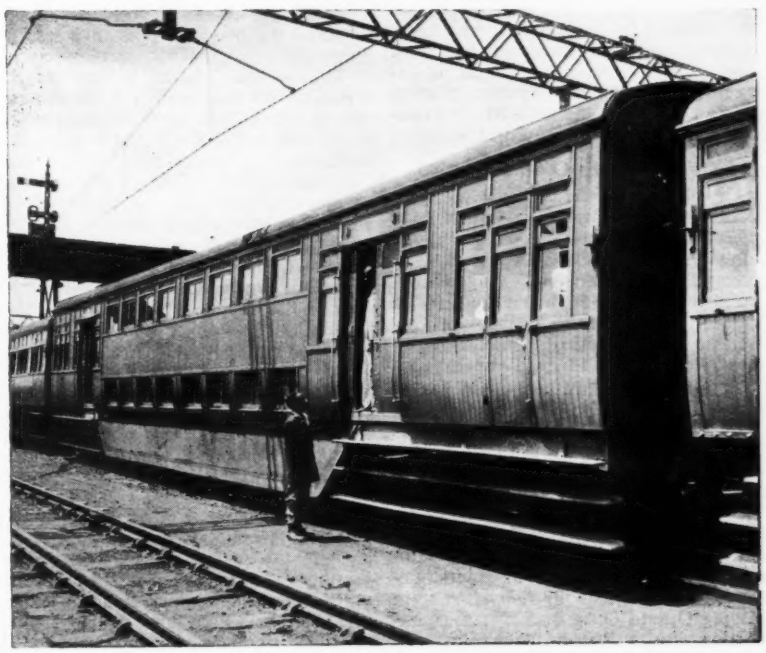
General Mitre Dining Car Services

The General Mitre Railway has withdrawn dining cars from some of its Buenos Aires-Rosario express services, replacing them with bar-coaches in which sandwiches, snacks, beverages, and drinks are available. Prices of meals in dining cars, in common with other Argentine railways, have been increased from seven to ten pesos and in certain important trains, twelve pesos.

Rosario Terminus Closed

The terminus of the ex-Central Córdoba railway in Rosario has been closed, all traffic now passing through Rosario West Station of the General Belgrano Railway. This is a further step

South African Double-Deck Coach



Third class double-deck coach, introduced in 1927 and the only one in South Africa, in service between Pietermaritzburg and Edendale

Photo] [Craig White-Smith

in the Rosario rationalisation scheme, and follows the recent closure of the former Rosario-Puerto Belgrano, Compañía General, and Santa Fé termini. The only main-line passenger stations remaining in Rosario are Rosario West (General Belgrano Railway) and Rosario North and Rosario Central (General Mitre Railway).

Railway to Rio Turbio

According to the Presidential message to Congress, a further development has now taken place in the scheme for providing a railway to the Río Turbio coalmines. The scheme for a broad-gauge railway between Río Turbio and Santa Cruz has apparently been abandoned in favour of a 0·75 metre gauge light railway, costing 100 million pesos, between Río Turbio and Río Gallegos, which lacks the natural advantages of Santa Cruz as a port, but is nearer to Río Turbio, and the route to which is more easily graded. Old rails and sleepers will be used in building the line, which it is proposed to complete within a year; and at some future date a fully-equipped broad gauge line will be constructed. Transport of coal is at present being effected by Sentinel steam road locomotives burning Río Turbio coal.

SWITZERLAND

Electrification of Private Railway

The electrification of the metre-gauge line between La Chaux-de-Fonds and Ponts-de-Martel, 16¾ miles, has been completed and electric services began on May 12. The line is owned and worked by the Compagnie des Chemins de Fer des Montagnes Neuchâteloises, established in 1889. With steam traction, four trains each way on weekdays and five each way on Sundays were worked and 45 to 47 min. were required for the journey, with six intermediate stops. With electric traction, the time is reduced to a minimum of 30 min. Eleven services each way are worked on weekdays and twelve each way on Sundays.

New Lötschberg Coaching Stock

The fourth of the six new coaches ordered by the Lötschberg Railway for international traffic, and described in our June 16 issue, was delivered by the makers, Schweizerische Wagons-und Aufzügefabrik, of Schlieren (Zurich) on June 7. One of these coaches is now used on the fast tourist service between Interlaken, Spiez and Zweisimmen, as a trailer of one of the two-unit light-weight railcars (the "Blue Arrow") operating twice daily each way (with a third service each way during the height of the season).

The other three coaches are in service between Ostend and Interlaken *via* Brussels, Luxembourg, Basle and Berne, and operate on that route up to October 7, the last day of the summer timetable. They run in the daily fast train leaving Ostend Quay at 5.55 p.m. (connecting with the 10 a.m. boat train from Victoria and the boat due to arrive at Ostend at 3.50 p.m.) and Brussels Nord at 7.45 p.m., and timed to arrive at Basle Federal station at 5.20 a.m. and at Interlaken East station at 9.49 a.m. In the reverse direction, they will leave Interlaken East at 7.14 p.m., Basle Federal station at 45 min. past midnight, and will be due to arrive at Brussels Nord at 10.19 a.m., and at Ostend at 12.6 p.m.

No decision has been taken yet as to the service on which the remaining two coaches will be used when delivered.

FRANCE

Powers of S.N.C.F. Board

The powers hitherto wielded by the Board of Administration of the National Railways in respect of staff and personnel were modified by a Government decree issued on June 8.

Article One of the decree stated that the statute governing the collective relations between the National Railways and their staff and personnel is to be evolved by a mixed commission presided over by an official of the Ministry of Public Works, Transport & Tourism, and comprising representatives of the National Railways as well as of the most representative of the syndicate organisations. The statute will have to be approved by the Ministry.

The decree also stipulated that the Board of Administration of the National Railways is to determine the salaries and wages of staff and personnel in conjunction with, and with the approval of, the Ministry of Public Works, Transport & Tourism, and the Ministry of Finance & Economic Affairs.

HUNGARY

Five-Year Plan and Transport

Total investments within the framework of the five-year plan, in force as from January 1, 1950, are to reach 35,000 million forint (about £1,064 million). Of this, industrialisation is to absorb the largest share, amounting to frt. 17,000 million, or nearly half, and transport, for which frt. 6,000 million (approximately £182,390,000) has been earmarked, comes second with agriculture. A new works for manufacturing axles and wheels is to be erected at Miskolc, the second most important industrial centre, some 115 miles north-east of the capital.

New railways to be built include one between Budapest and Mohács on the Danube in the south of the country near the Jugoslav frontier. Mohács is to be developed, within the five-year plan, as the third industrial centre of the country, having regard mainly to the extensive coal deposits existing between Mohács and Pécs in the west. The present railway connection between Budapest and Mohács is circuitous. There is first the main line from Budapest Southern Station to Pécs, 152 route-miles, then a secondary standard-gauge line between Pécs and Villány, with another standard-gauge branch, 15½ miles long from Villány to Mohács, 180 miles in all, but fast trains operate only between Budapest and Pécs, though there are through coaches to and from Mohács.

The new line to Mohács is to lead due south from Bataszék (on the Dombovár-Baja west-east line); from Bataszék to the north as far as Rétszilas (on the Budapest-Pécs main line, 67 miles south of Budapest) the existing secondary standard-gauge line, 46½ miles long, is to be converted into a main line. The new route will be some 30 per cent. shorter than the existing one. The capacity of the present double-track main line between Budapest and Miskolc is to be greatly increased. Five new bridges are to be built across the Danube and four across the Tisza River, but it has not yet been revealed how many of them will carry railways.

Frt. 650,000,000 (nearly £20 million) has been allocated to the improvement of the transport system of Budapest. The main item is the building of the first line, four miles long, of the new underground railway, which will be distinct from the existing electric underground line beneath the Andrassy Street opened in 1896.

AUSTRIA

Double-Deck Railcars

After successful experiments with double-deck railcars between Vienna, Salzburg, Graz and Villach, more are to be put into service. Orders have been placed for twelve, the first two to be delivered next autumn. The floor height is only 10 in. above rail level so that, although each deck has a headroom of 6 ft. 7 in., the standard Continental clearance is not exceeded. The cars have third class accommodation only but are comfortably equipped.

WESTERN GERMANY

New Maritime Station at Emden

The Federal Railways have decided to build a new maritime station at Emden-Aussenhafen, the outer port of Emden. The new station building will be located at the quay serving the vessels which ply between Emden and Borkum. Emden-Aussenhafen is the terminus of a branch from Emden-Süd station on the Münster (Westf.)-Norddeich main line.

Black Forest Line Reopened

The last of the war-damaged lines in the Karlsruhe management district to be rehabilitated, the Rastatt-Freudenstadt line, approximately 36 miles long, leading through the northern Black Forest, has been reopened, after the completion of the Christophtal viaduct near Freudenstadt. Before the reopening throughout, local services were operated between Rastatt and Baiersbronn, 30¾ miles, with connecting road services between the latter place and Freudenstadt. Rastatt is about 15 miles south of Karlsruhe on the Karlsruhe-Basle main line. From Freudenstadt, the railway extends as far as Horb on the Stuttgart-Lake of Constance main line.

Steam Distribution on Colonial Railway Locomotives

Requirements for general-purpose duties and low axle loading

By G. V. O. Bulkeley, C.B.E., M.I.Mech.E.,
formerly General Manager, Nigerian Railways

BECAUSE of gradients, low axle loading, and a need for general-purposes engines which can haul either passenger or goods trains, locomotives for Colonial railways have driving wheels of small diameter, the largest at present in use being the 5-ft. wheels of the Pacifics of the Nigerian Railway. More customary are 4 ft. 6 in. and 4 ft. Not long ago driving wheels were even smaller.

While maximum speeds on Colonial railways are low, this makes it of special importance that average speeds shall approach as nearly as possible to the maxima allowed; otherwise, elapsed times between starting and destination points become uneconomically lengthy, and up-grade crawls with down-grade rushes are encouraged.

Higher Average Speeds

The advance in average speeds on railways using small-wheel engines means high r.p.m. with valve events occurring very rapidly most of the time. The table below gives piston speeds in round figures for the wheel diameter range:—

Wheel dia. in.	Rev. per mile	Piston speed in ft. per min. at 10 m.p.h. Stroke (in.) 24	25	26	27	28	29	30
48	420·1	**280**	293	303	316	327	338	350
51	395·4	263	276	286	297	307	318	329
54	373·4	249	259	270	**280**	291	301	311
57	353·8	236	245	255	265	275	286	295
60	335·1	224	233	243	252	261	270	**280**

A 60-in. wheel with a 30-in. stroke, or a 54-in. wheel with a 27-in. stroke, produce the same piston speed as a 48-in. wheel with a 24-in. stroke, but with 84 and 47 less revolutions per mile and lower valve speed, assuming the same travel, also less wear on motion.

A 48-in. wheel with a 26-in. stroke gives the same piston speed (910 ft. per min.) at 30 m.p.h. as an 80-in. wheel with the same stroke does at 50 m.p.h.; therefore, assuming the same valve travel, a valve gear that provides generous port openings for an express engine in England is probably suitable for the small-wheel engine overseas.

Axle loading is generally low, and desired power at the rail can best be secured by that combination of cylinder diameter, stroke, and wheel diameter which allows of the largest possible wheel, which in any case must be small. This postulates the longest stroke the wheel will allow with a corresponding minimum cylinder diameter affording good expansion of steam.

For a 48-in. wheel a 27-in. stroke is the maximum with a big-end of normal dimensions. A 57-in. wheel can take a 30-in. stroke, for example, the former G.W.R. 2-8-0 engines with a 4-ft. 8½-in. wheel. There is no reason why designers should keep to even numbers for cylinder strokes. The important thing is that steam shall enter and leave a cylinder with freedom at high r.p.m. This means long travel valves with long lap. An experiment gave the following results at 60 m.p.h., piston speed 1,260 ft. per min.:—

Lap	1¼ in.	2 in.
Velocity of valve at 25 per cent. cut-off	3·25 ft. per min.	4·38 ft. per min.
Acceleration of valve at 25 per cent. cut-off	49·39 ,,	66·31 ,,
Port opening of valve at 25 per cent. cut-off	0·23 in.	0·31 in.
Opening to closing	0·04 sec.	0·04 sec.

The matter of lead also becomes important at high r.p.m. The question arises whether an outside Stephenson valve gear, with increasing lead on linking up, might not be better for small-wheel engines than the normal Walschaerts. The former G.W.R. 2-cylinder engines all have Stephenson gear. This seems a matter for actual experiment with a Colonial railway engine. Sometimes too much lead at speed causes hot big-ends.

It is important that the link of a Walschaerts gear shall not swing more than 22½ deg. either side of the vertical. In my experience a new class of engine having a valve travel of 6½ in. was given too short a link, resulting in excessive swing with kicking dies and buckled radius rods. As fitting a longer link also would have meant weighbar alterations the valve travel was reluctantly shortened to 5¾ in.

Valve Travel

To enable a 2-cylinder locomotive always to start without having to set back it has been demonstrated that maximum cut-off should be 88 per cent. In a discussion on valve gears at the Canadian Railway Club it was stated that to accomplish this lap plus lead should not exceed 19 per cent. of the valve travel. The following examples were given:—

Max. cut-off	88 per cent.	88 per cent.
Valve travel	6 in.	7 in.
Lap	2⅜ in.	1⅝ in.
Lead	¼ in.	¼ in.
Lap plus lead (19 per cent. of valve travel)	1⅝ in.	1⅝ in.

It is suggested that the high r.p.m. of Colonial railway engines should be in the forefront of the designer's mind and that all cross-sectional steam areas should be generous from superheater and regulator valve onwards. Valve chests should be bellied out for increased area and steam pipes and piston valve diameters large. A port opening of 1/40th piston area at 25 per cent. cut-off has been put forward as good practice. A full head of steam at a low drop from boiler pressure should be available at the fast moving valve.

Unless this is done, potential steam may remain locked up in the boiler. As that in the cylinder may be tardy in escaping; it is suggested that these locomotives should always be fitted with twin exhaust pipes with elliptical chimneys for the freest possible exhaust.

Poppet valves are used on the Pacifics of the Malayan Railway, and, as in the case of the Ceylon diesels, a comparative report on performance, costs, and maintenance would be welcome. The Baker valve gear allows longer valve travel than the Walschaerts, but has not yet been tried on Colonial locomotives.

BRITISH ALUMINIUM INTERESTS IN BORNEO.—The directors of the British Aluminium Co. Ltd., and Aluminium Limited, Montreal, Canada, announce that they are undertaking a joint and comparative study of the suitability of sites in British North Borneo and the Gold Coast for the production of aluminium.

RECORD ROAD CASUALTIES IN APRIL.—Casualties on the roads of Great Britain during April totalled 14,005, compared with 13,936 in the corresponding month last year, and 18,597 in April, 1939. This was the worst April for total casualities since the end of the war. The number of killed, 349, was nine more than in April last year. Seriously injured totalled 3,458, against 3,333, and slightly injured 10,198, against 10,263. Child pedestrian casualties which normally show a seasonal increase at this time of year decreased this year from 2,152 in March to 1,835 in April.

REPAINTING OF GLASGOW STATION ROOF.—Work now in progress of repainting and cleaning the covered area of Glasgow Central Station is a job of considerable magnitude, and is being carried out in two stages of which only the first will be completed this year. The area of surface to be painted in the first of the two main sections of the station measures approximately 9¾ acres. This part of the roof has a maximum span of 218 ft. with an overall length of 850 ft. It has not been painted since 1935. The second stage of the work will be overtaken during 1951. The work is being carried out by the staff of the District Engineer, British Railways, Glasgow (South).

SUCCESSFUL START OF HOTELS INFORMATION SERVICE.—In its first week of operation the London Hotels Information Service operated by the British Hotels & Restaurants Association in conjunction with the British Travel & Holidays Association, has arranged accommodation in London hotels to a total of 1,500 "bed nights." The scheme was inaugurated to assist visitors from overseas, and the travel trade generally, by marrying requests for accommodation with accommodation available. The number of requests for assistance received during the first few days suggests that the service will be of great value to the tourist trade, particularly during the Festival of Britain next year when a record volume of tourist traffic is expected.

Developments in Illuminated Diagrams

A new design eliminating all disturbing reflection effects and combining maximum facilities for indication with adaptability to compact panel assemblies

AN important feature of modern signalling installations is the illuminated diagram. Although introduced nearly 50 years ago in connection with the application of power signalling on the Metropolitan District Railway at the time of the electrification, and for a long time used only with that class of work, it is now often applied in manually operated signal boxes in conjunction with track circuit control and other refinements.

Since its introduction, when it quickly proved its usefulness, mimic diagrams representing track sections, points, and signals have been operated on different principles. In some still earlier types eyeball or flag indicators were used, and at a later date continuous illuminated strips of light were shown through paper stencils, cut in accordance with the track layout. The high power consumption of the continuous strip illumination, with the type of lamp then available, led to the use of spots of light from small lamps, similar to those used on telephone switchboards, and at a later stage the glass fronted stencil type of diagram was replaced by sheet-metal panels, having telephone visual lamp indicators located in the track layout, itself painted on the front plate.

Advent of Route Relay System

Until about 1920 the practice was to keep the diagram normally illuminated when all tracks were clear, but to achieve maximum economy, and particularly where batteries were in use, the practice of keeping the diagram normally dark and illuminating red spot lights when a track section was occupied came into favour. With the advent of route relay interlocking systems, more information had to be given by the diagram, and a discontinuous line of white spots was illuminated along a route as soon as the signalman had set it up. As the various sections became occupied by a train, red lights appeared between the white ones. The releasing of the route behind the movement cancelled that portion of the white illumination.

In all these diagrams the front face of the panel, whether glass or metal, was flat, and acted as a reflector for extraneous light. This necessitated careful shading of lamps, windows, or other sources of illumination, to avoid undesirable reflections reaching the signalman's eye. Modern relay interlockings have increased in size, and the area and number of tracks now brought under the control of one signalman have resulted in the illuminated diagram becoming a large panel, extending many feet horizontally and vertically. The area from which reflections must be prevented is therefore a correspondingly large one.

In addition, a large diagram near the control machine, whether an interlocking frame or a panel, may present a wide vertical angle to the signalman's eye and require him to spend a good deal of time looking upwards at an inconvenient angle.

With the object of overcoming the disadvantages of earlier designs, the Westinghouse Brake & Signal Co. Ltd. has developed an improved design, the purpose of which is to eliminate all reflection from the front face, at the same time increasing the visibility of the track plan and the various indications, of whatever kind, conveyed by it to the signalman. This has been achieved by an ingenious use of modern plastic materials.

The diagram, which formerly comprised either a metal frame with a glass panel or a metal panel with painted front plate, now becomes a curved transparent plastic sheet, internally illuminated, on which the tracks, signals, points, numbers, and other features stand out with great visibility. This portion of it remains always the same. It does not change as traffic conditions alter, but gives information of a constant nature, which must always be in front of the signalman. Behind this sheet is another representation of the track layout; the indications given by this portion, however, are variable, and change with traffic conditions, train movements, and signal and point operations.

Modern plastics have a high efficiency for internal reflection and transmission, which enables light to be conveyed to both portions of the diagram by the system of "piped-lighting" which is now being recognised.

Details of Construction

Fig. 1 is a schematic cross-section of the new diagram. Sheet "A" is the front panel carrying on the back all the fixed information by painted numbers, lines, or symbols, and is illuminated internally by strip lighting from lamps at "B," where light enters the sheet. Where the back surface has been painted the light is reflected outwards to the eye. It travels up the curved sheet by internal reflection and is reflected from every painted line or surface it meets.

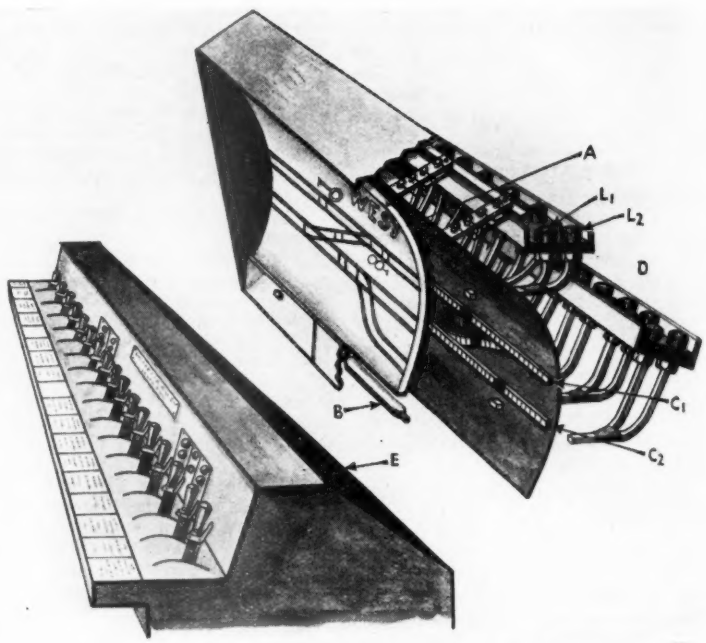


Fig. 1—Cross-section of new type illuminated diagram

The variable portion of the diagram is provided by rectangular section plastic rods, "C1," "C2," and so on, located at the back of sheet "A" and carried by a metal back-plate "D" through which pass the "pipe" connections conveying light from the light units "L1," "L2," and so on. The whole sandwich, consisting of the front panel, the plastic rods, and the back-plate "D" is curved to a radius, so arranged that any light striking the front panel must be reflected downwards to a point below the eye level of the shortest signalman. In practice the back of the control machine is given a non-reflecting surface "E" and all light reflected on to this from the front panel is absorbed by it.

Illuminated diagrams are used in various ways, sometimes merely to show occupied or clear sections, and in other

cases to show routes set up and their occupation, as it occurs during traffic movements.

The new design lends itself to any system of signalling, and is, in fact, also particularly suitable for other control systems, such as the mimic diagrams used in remote sub-station control or indication signs used in conjunction with train describers and various similar applications.

An example applied to a route signalling system is shown in Fig. 2. Fig. 2(*a*) shows a route set up with a train waiting at a signal. In such a case the route would appear illuminated in white light. On the clearing of the signal the train would move forward to its first section which would then change from white to red as in Fig. 2(*b*). This is accomplished by having two lampholders, either of which can feed the pipe system to the track sections involved, and the occupation of a section merely switches from one lamp unit to another, one of them containing a colour filter. As the train moves along the route each section becomes red as it enters it, as in Fig. 2(*c*). The white "route set" indication can either be maintained behind the train, or extinguished as sections of the route become released by the interlocking circuits, thus allowing the signalman to see immediately which portion is now free for further traffic movements.

A feature of this diagram is that when a route is set a clear white line of track appears throughout, but as the sections become occupied the illumination changes to red, but now extending to the fouling point on all connecting tracks. When it is used simply to indicate occupancy, the track sections are illuminated red, or any other desired colour, when occupied, but normally they are not illuminated. The illumination of the fixed information on the front panel, however, always remains.

Failures and Replacements

All track sections have at least two lamps illuminated, so that the failure of a lamp filament does not result in a lack of indication. It is often desirable to give other indications than those of track occupancy. Signal aspects may be shown. The change to either red yellow, or green may be repeated through a single aperture, showing the appropriate one of these three colours, whichever is desired. Numeral indications referring to platform starting signals, route indicator display, and similar requirements are provided by the same system.

Replacement of lamps and wiring is carried out behind the back-plate housed in the casing. The work of changing a lamp in the removable socket unit takes only a few seconds. Miniature Edison screw lamps of 16 volts, 3 watts rating, under-run, are used in the lamp houses, each designed for high optical efficiency. The plastic connections from them to the track indication bars are all joined in such a way that any section can be detached for alterations. For large diagrams, say those having a height of more

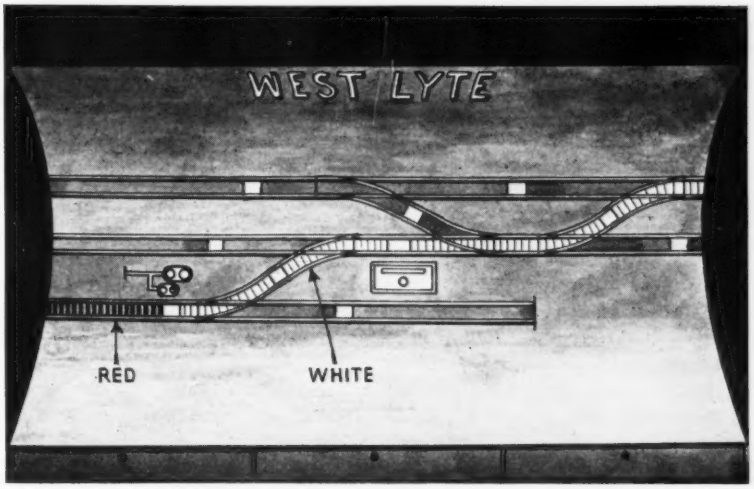


Fig. 2 (a)—Route set up and train waiting

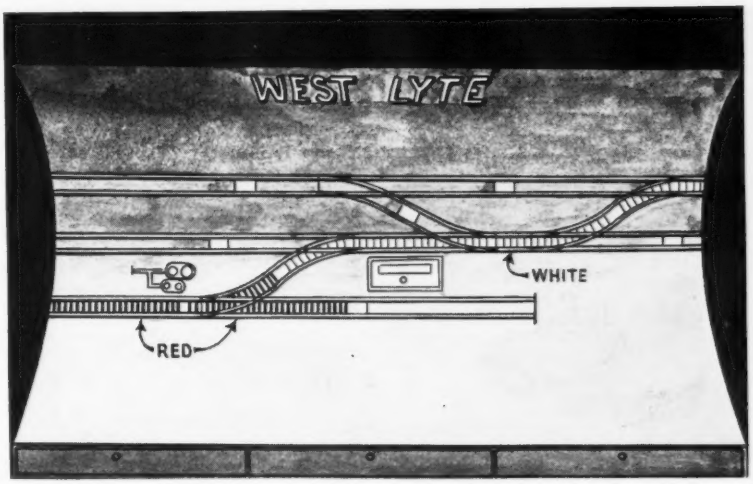


Fig. 2 (b)—Train starting from signal

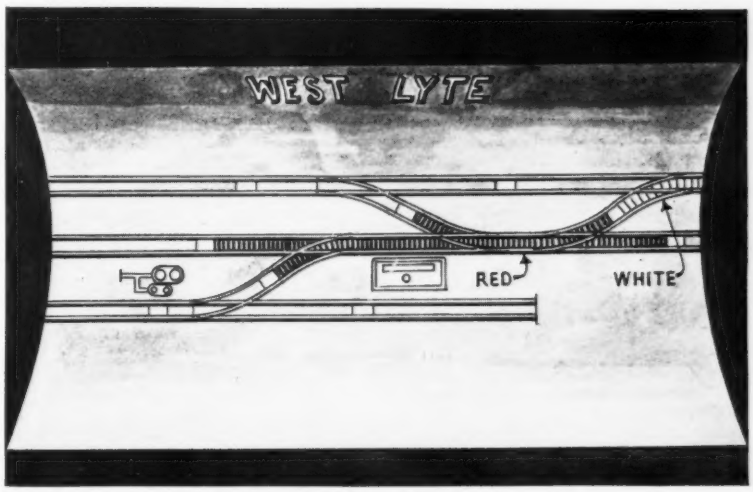


Fig. 2 (c)—Train proceeding through controlled area

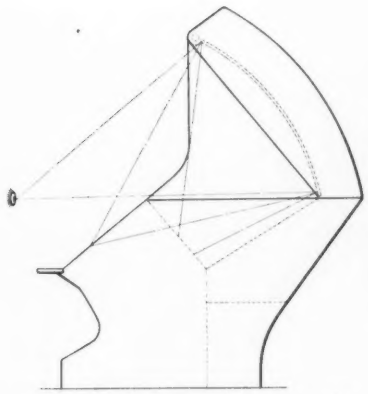


Fig. 3—Principle of panel assembly

than 3 ft. or 4 ft., edge illumination of the front panel is added at the top as well as the bottom. A test lamp position, comprising a continuously energised lamp housing and plastic rod indicator, allows any lamp to be checked by merely inserting it and its removable holder into the test socket.

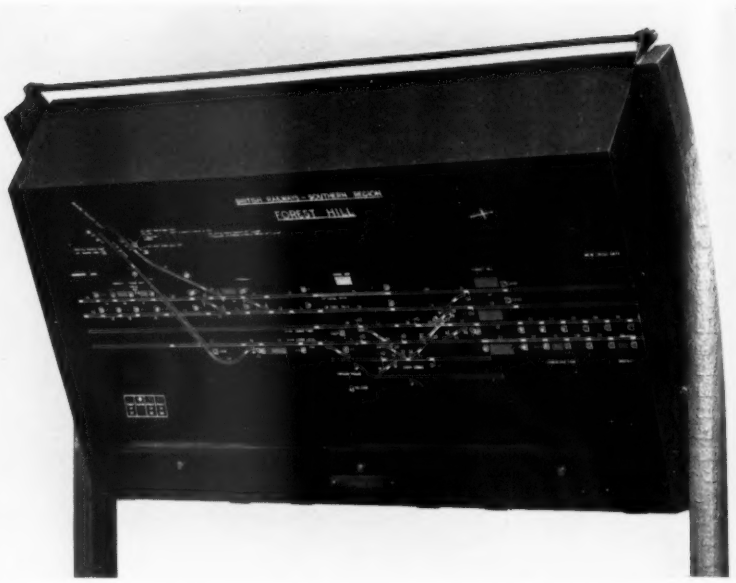


Fig. 4—Diagram for Forest Hill, Southern Region

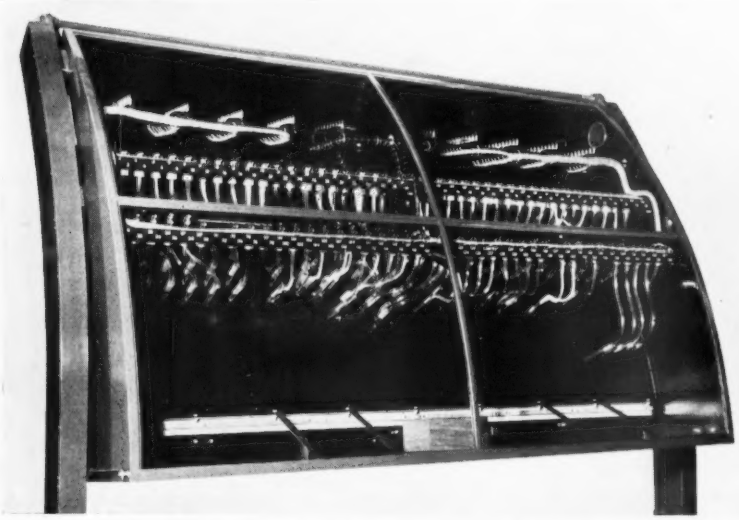


Fig. 5—Terminals, lamp houses, and wiring

the rectangular casing forming the supports. Back cover panels normally enclose the whole of the portion shown. The strip lighting for the front panel is seen along the lower edge of the casing and the box in the centre contains spare lamps and lamp housings for quick replacement.

Adaptability to all types of installation is shown by the small panel in Fig. 6 suitable for mounting on the block shelf over a mechanical lever frame.

It is hoped that the introduction of this form of diagram, which on trials is considered to have proved superior to previous forms, will lead to the development of the unit assembly shown in Fig. 3 with all auxiliary apparatus, such as train describers, clocks, telephones, pressure gauges, and so on, combined with it, the side wings closing the space between panel and diagram being used to carry the devices giving the ancillary information.

Tests made with loud speakers located at the back of the control frame in such

(*Continued on page* 741)

For the maximum efficiency it is desirable that the diagram and the control panel should be designed as one from an optical point of view, and Fig. 3 shows the modern conception of a relay interlocking panel with the diagram correctly proportioned and positioned in relation to the eye.

Fig. 4 shows a diagram for use with a power frame. It shows red indications for occupied tracks and is normally dark (except for the front panel illumination) when they are clear. The back is seen in Fig. 5 with the piped-lighting system and the position of the lamp houses on the horizontal shelves running the length of the casing. The lamp unit terminals are on the top shelf, the wiring to the relay room being carried through hollow trunnions down

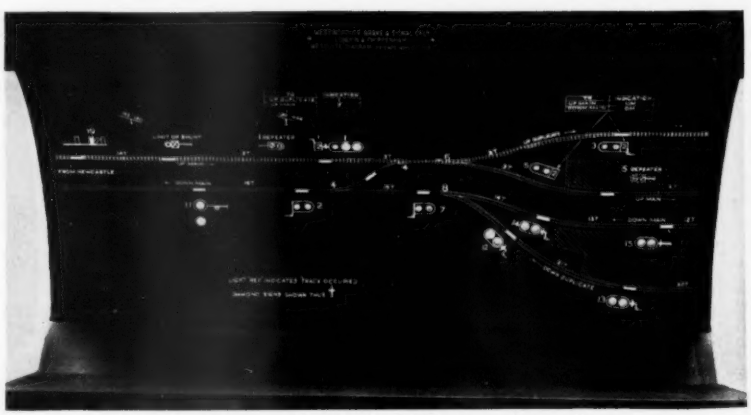
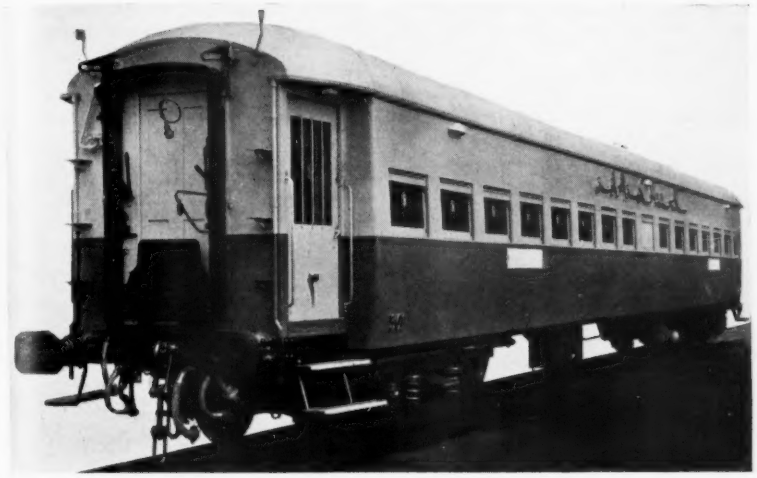


Fig. 6—Diagram for block-shelf over ordinary frame

Rolling Stock for Iraqi State Railways

Designed with buffing and drawgear suitable also for operating on European railways



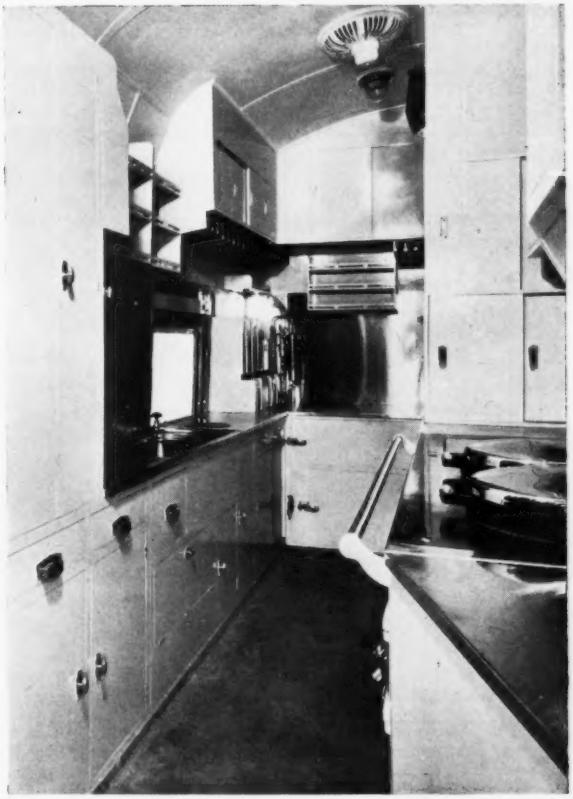
A CONTRACT for the supply of rolling stock to the Iraqi State Railways has recently been completed by the Birmingham Railway Carriage & Wagon Co. Ltd. The rolling stock of 4 ft. 8½ in. gauge was supplied to the requirements of the C.M.E. for the Iraqi State Railways and to the specifications, supervision and inspection of the Crown Agents for the Colonies. The stock consists of 20 third class coaches, six air-conditioned first and second class coaches, four luggage and brake vans, two non air-conditioned first and second class coaches, and three air-conditioned first and second class coaches with kitchen.

Bogie Design

The bogies, which are of similar design for all stock, are built up of rolled-steel sections, and pressed-steel plates and are fitted with equalising beams. Triple-coil side springs and quadruple elliptical bolster springs are also fitted. The bogies of the upper class stock are fitted with Ferodo brake blocks and Silentbloc brake hanger bushes with a view to reducing noise. Timken roller bearing axleboxes are fitted.

The underframes, which are of riveted construction, are built of rolled-steel sections adequately stiffened by knees and gussets, and they are fitted with steam heating pipes, automatic and non-automatic air brake system, and a through vacuum brake pipe. Provision has been made on the non-air-conditioned underframes for fitting vacuum brake equipment at a later date. The end connections of the brake and steam pipes, together with the buffing and drawgear and vestibule gangways, are to the recommended standards of the

First class coupé in night position



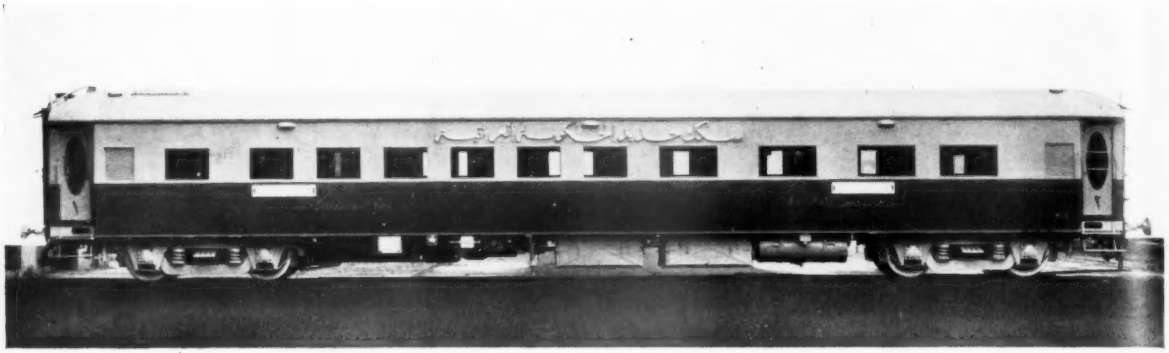
Interior of kitchen of day and night coach

Union Internationale des Chemins de Fer and also to the requirements of the Turkish and Syrian railway authorities and will enable the coaches to couple to, and run with, European stock if required.

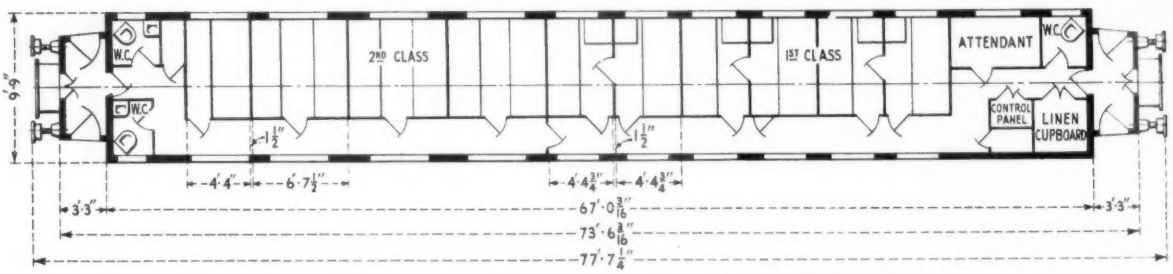
Body Construction

The body structure is of ⅛-in. pressed-steel framing to which the body panels of 14 S.W.G. are secured by countersunk rivets, the panel joints being welded to give a flush exterior. The body is insulated by means of sprayed asbestos ½-in. thick. On the air-conditioned stock the sprayed asbestos has been increased to 1-in. thickness on the roof sheets. The exterior of all the coaches is finished in a pleasing shade of green below the waist, cream from the waist to the gutter, and a lighter shade of cream has been applied to the roofs of the cars, which are of 16 S.W.G. panel sheeting. Stainless steel lettering is fitted to all cars.

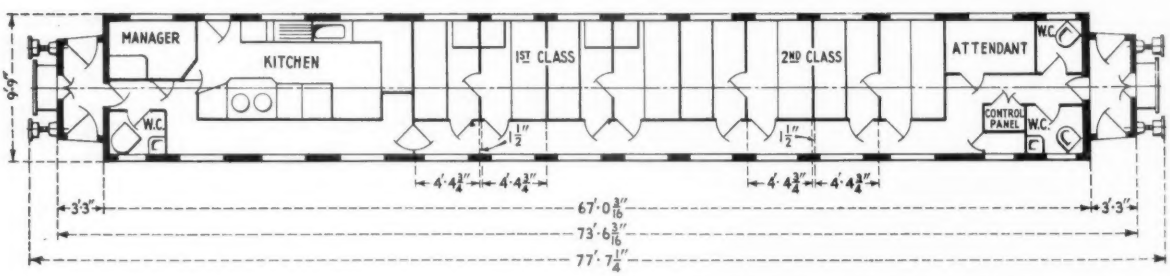
The air-conditioned composite coaches have seating accommodation for 18 first class and 28 second class passengers and sleeping accommodation for six first class and 14 second class passengers respectively. The first class section comprises six coupé compartments in pairs, with intercommunicating doors, and is finished in curly oak panels with French walnut framing, with an ebony striping line. The seats are finished in green morocco leather, and revolve as in the Continental design, to expose the mattress for night use.



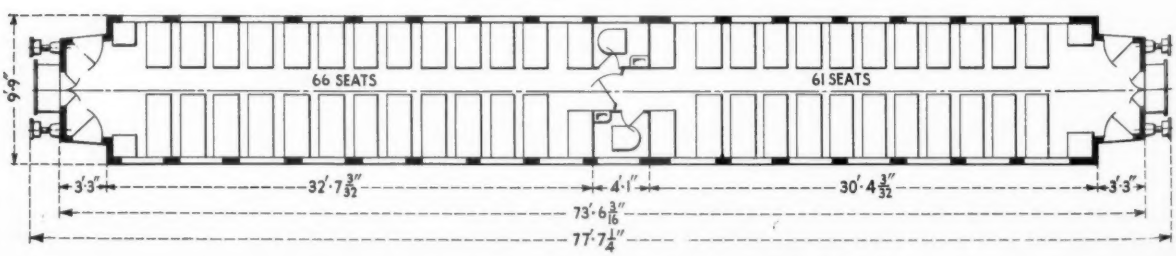
Air-conditioned first and second class composite coach



Principal dimensions and arrangement of first and second class coach



General arrangement of air-conditioned day and night coach and kitchen



Seating and arrangement of third class non-air-conditioned coach

A wash-basin, with hot and cold water, and a hinged table are fitted, together with parcel racks, towel cupboards, ash trays, and drinking water carafe with glass; night lights and bed lights are provided. The second class section, which is finished in African mahogany panels with walnut framing, comprises one coupé and three full compartments, and the compartment has two seats and upper berths in blue morocco leather; the upper berths are hinged and are secured against the partition when not in use. Interior fittings comprising parcel racks, ash trays, night lights, and bed lights are provided.

Separate lavatory accommodation is provided with an impervious tile floor curved at the bottom to the side tiles to facilitate cleaning; towel rack and mirror are fitted. The corridor has illuminated toilet indicators fitted at each end, and an attendant's compartment is provided with the necessary linen cupboards. Certain windows in the corridor are of single Calorex glass and are arranged to open in an emergency.

The upper class composite coaches, which are not air-conditioned, are almost identical, the only difference being in the provision of fans, lifting windows, and louvres, instead of fixed double windows. The cars are arranged for easy conversion to air-conditioning if required at a later date.

Third Class Coaches

The third class coach will seat 127 passengers in two saloons, divided at the centre by two latrine compartments, each accessible from one saloon and with a communicating door between the two saloons. A stainless-steel drinking font is fitted in the alcove formed in each saloon by the latrine compartment.

The floor is framed in teak with two layers of floorboards and a hardwood wearing board down the passages and vestibule, and is finished in battleship grey. The walls, panelled in Sundeala super hardboard, are finished in grey green picked out in green at the moulds. The ceiling, panelled in Sundeala hardboard, is finished stippled white.

The seats are of tubular construction with seat and back squabs in rattan. Longitudinal parcel racks are provided, also steam heating, electric lighting and passenger communication. Windows and louvre frames of Alpax alloy are fitted, having Beclawat spring balances. The latrine compartment has an aluminium silicon alloy cast floor embodying the latrine pan, the walls being lined with white vitreous enamelled panels and moulds. The side entrance doors are an aluminium silicon alloy casting.

Upper Class Composites

The upper class composite coach with kitchen has seating accommodation for twelve first class and 16 second class passengers and sleeping accommodation for four first class and eight second class. The interior finish and furnishing of the passenger accommodation is similar to that provided in the other upper class composite coaches. Two passenger lavatories are provided; one attendant's lavatory with two attendants' compartments, with sleeping accommodation for four.

The kitchen is fitted with an Aga stove, warming ovens, and hot plate. An automatic refrigerator has also been provided, having a capacity of 19·5 cu. ft.; an ice chest and ice water tank have also been included. A stainless-steel sink is fitted and there is ample cupboard accommodation.

The floor is of green Decolite, the cupboards and racks are finished cream to match the stove and refrigerator, the cupboard tops at waist level and the walls to cantrail level are covered with stainless steel sheets and moulds. A serving hatch is arranged to open into the corridor and the ceiling, fitted with two exhaust fans, is finished stippled matt white.

Luggage and Brake Vans

The luggage section is divided into two main compartments sub-divided by detachable expanded metal partitions. Entrance is by sliding doors of Alpax alloy. The interior is painted grey green with white ceiling. Lift windows and louvre frames are fitted in this compartment.

The brake compartment has a lavatory and wash-basin, breakdown tools, steam heater, letter rack, locker, brake valve, and hand-brake wheel.

The following firms, as sub-contractors, supplied material and fittings for the carriage stock:—

Hardboard and third class seats	G. D. Peters & Co. Ltd.
Windows and frames ...	Beckett Laycock & Watkinson Limited
Alpax doors, light and louvre frames	Lightalloys Limited
Metallic fittings ...	James Beresford & Son Ltd.
Blinds	Laycock Engineering Co. Ltd.
Electric light equipment. Air-conditioning equipment. Water raising equipment	J. Stone & Co. Ltd.
Westinghouse brake equipment	Westinghouse Brake & Signa Co. Ltd.
Vapour heating equipment	Gresham & Craven Limited
Limpet asbestos and cork insulation and Decolite floorings	J. W. Roberts Limited
Commodes, cisterns, and fittings	John Levick Limited
Vestibule gangways ...	A. G. Wild & Co. Ltd.
Springs	Willford & Co. Ltd.
Roller-bearing axleboxes	British Timken Limited
Wheels and axles ...	Steel Peech & Tozer
Ventilators	Monarch Controller Co. Ltd.
Cooking stove	Aga Heat Limited
Refrigerator	The British Automatic Refrigerator Co. Ltd.
Stainless steel lettering	Birmingham Guild Limited
Indiarubber springs ...	Geo. Spencer, Moulton & Co. Ltd.
Brake hanger bushes ...	Silentbloc Limited
Brake blocks	Ferodo Limited

Developments in Illuminated Diagrams

(*Continued from page* 738)

a way that they project sound to the front face of the diagram, show that its curvature makes it an excellent sound reflector and focussing means, enabling a signalman to hear messages at normal voice level without interference from extraneous noises, always associated with a signal box.

It has sometimes been necessary to add much ancillary apparatus to control frames which might well have been incorporated in the design in the first instance, and the provision of the wings between the panel and diagram may overcome the difficulty of projections extending above the panel's normal height and liable to interfere with the operator's line of sight.

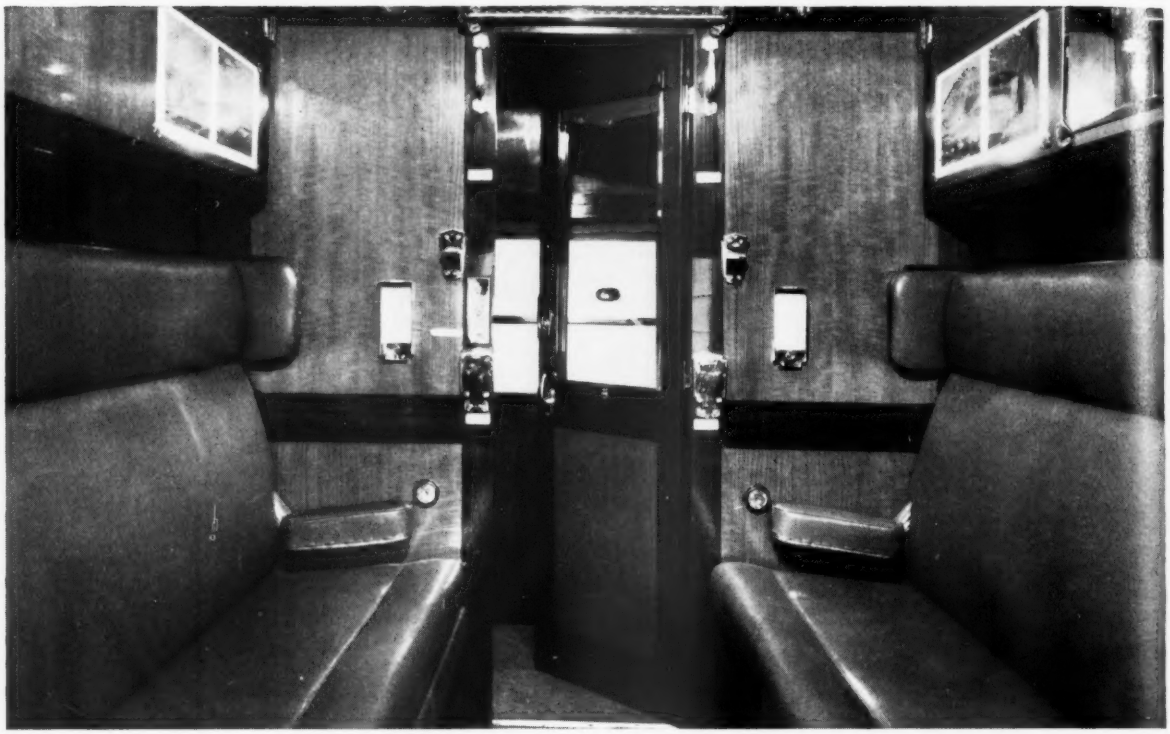
There are a number of advantages in the new diagram, such as its non-ageing front panel, which has nothing on the exposed surface; the non-reflecting features, which offer attractions in sunny climates; the fact that the degree of the illumination of the front panel is easily controlled by a variable voltage transformer which feeds the strip lighting system, enabling it to be raised in bright surroundings and lowered at night when it might otherwise be considered too glaring.

The track spacing has been reduced in comparison with earlier designs, and comparatively large relay interlockings can now be dealt with on diagrams of moderate height, reducing the vertical angle which the signalman must observe. It is hoped to limit the angle to less than 35 deg. for any installation.

SPECIAL TRAIN FOR ALUMINA BLOCKS.—One of the largest single consignments of alumina refractory blocks was recently despatched, by a special train from Wortley, near Sheffield, to Birkenhead, for export to Formosa. Special arrangements were made by the District Goods Superintendent, British Railways (Eastern Region), Sheffield Victoria, in co-operation with the consignors, General Refractories Limited, to provide two 6-ton Bedford Scammel haulage units and five 6-ton trailers to operate a shuttle service between Wharncliffe Works and the station. To facilitate the transfer from road vehicles to railways wagons a 3-ton mobile crane was also brought into service by British Railways.

PRESENTATIONS TO THE "AMSTERDAM" IN HOLLAND.—A mural coat-of-arms of the city of Amsterdam, the gift of the city to the British Railways new 5,000-ton steamer *Amsterdam*, described in our June 16 issue, was unveiled by Alderman de Ross, acting for Alderman J. D'Ailly, the Burgomaster of Amsterdam, before it left the Hook of Holland on June 22 on its normal public sailing to Harwich. A tassellated mural mosaic, the gift of the Netherlands Railways to the ship, was unveiled by Mr. F. Q. den Hollander, President of the Netherlands Railways. The gifts were formally accepted on behalf of the Railway Executive by Mr. V. M. Barrington-Ward, Member of the Executive, who was accompanied by Mr. C. K. Bird, Chief Regional Officer, Eastern Region. Before sailing, the ship was inspected by representatives of the Netherlands Government, the city of Amsterdam, the Netherlands Railways, and other interests concerned with the shipping and tourist trade between Great Britain and the Netherlands.

Rolling Stock for Iraqi State Railways



Second class compartment in day position

Interior of third class coach

RAILWAY NEWS SECTION

PERSONAL

Mr. A. E. Hadley, C.B.E., has resigned from the board of the Rhodesia Railways Trust.

At a meeting of the Council of the Irish Transport Officers' Guild which was recently held in Dublin, the following officers were elected for the year 1950-51; Chairman, Mr. E. C. Dunne; Honorary Secretary, Mr. R. L. Cant; Honorary Treasurer, Mr. A. Guerrini.

Mr. Sydney George Wood, lately Principal Transport Officer, Ministry of Supply, was among those awarded the O.B.E. in the King's Birthday Honours List.

We regret to record the death on June 23, at the age of 74, of Mr. Harry Tilling, sometime Managing Director of Thomas Tilling Limited.

Rear Admiral T. P. H. Beamish, C.B., D.L., has resigned from the board of Tyresoles Limited and from the board of the parent company, Henry Simon (Holdings) Limited. Major Tufton V. H. Beamish, M.C., M.P., has been elected as a Director to succeed his father.

We regret to record the death on June 23, at the age of 39, of Mr. Robert Brailsford Hounsfield, B.A., A.M.I.C.E., A.M.I.E.E., A.M.Inst.T., Assistant-in-charge of the Traffic Engineering Group, Department of Civil & Municipal Engineering, University College, University of London.

Mr. V. F. Hare, Head of Section (Statistics), Accountant's Office, London Midland Region, British Railways, has been appointed Assistant (Statistical Matters), in the Chief Financial Officer's Department, at Railway Executive Headquarters, in succession to Mr. P. Holt, who is retiring today.

The Road Vehicle and Accessory Manufacturers' Advisory Panel to advise on the practical research being carried out by the Production Engineering Research Association of Great Britain, on behalf of the firms represented is as follows:—

Messrs. H. N. Whitehouse, Austin Motor Co. Ltd.; J. Silver, Jaguar Cars Limited; J. Harris, Standard Motor Co. Ltd.; L. H. Sewell, A.E.C. Limited; D. L. Campbell, Albion Motors Limited; G. Murray, Pressed Steel Co. Ltd.; A. Hosker, Leyland Motors Limited; A. T. Cheesley, Metropolitan-Cammell Carriage & Wagon Co. Ltd.; A. E. Hudson, Westinghouse Brake & Signal Co. Ltd.; A. Thomas, Bromilow and Edwards Limited; T. Bissell, J. B. Brooks & Co. Ltd.; B. Stevenson, Marcroft Wagons Limited; C. F. Cunningham, Projectile & Engineering Co. Ltd.

Other advisory panels are being formed on behalf of firms making agricultural and earth-working equipment, electrical equipment, engines and turbines.

Mr. T. Marsland, who, as recorded in our March 3 issue, has been appointed Chief Mechanical Engineer, Western Australian Government Railways, was educated at Ardwick Higher Grade School, Manchester, gaining an exhibition at the Manchester College of Technology. He was apprenticed to Beyer, Peacock & Co. Ltd. (Manchester) in 1909, and later became a junior draughtsman. During the first world war he served with the Royal Field Artillery. On demobilisation, he rejoined Beyer, Peacock & Company, but later was appointed electrical locomotive designer with the Metropolitan-Vickers Electrical Company. He subsequently rejoined Beyer, Peacock & Company. In 1928 he took up an appointment with the West Australian Government Railways Mechanical Branch as locomotive draughtsman. Mr. Marsland was promoted Assistant Workshops Manager at the Midland Junction Workshops in 1937, and later Assistant Chief Mechanical Engineer and Chief Draughtsman. He is a Member of the Institution of Locomotive Engineers (London) and the Institute of Engineers (Australia).

Mr. T. Marsland

Appointed Chief Mechanical Engineer, Western Australian Government Railways

Mr. R. P. Raikes has been appointed Publicity Manager of Marconi's Wireless Telegraph Co. Ltd.

Mr. W. H. Nicholson, who, as recorded in our March 10 issue, has been appointed District Motive Power Superintendent, Eastleigh, Southern Region, entered the service of the L.S.W.R. in 1910 and served as an apprentice fitter. He served with the Royal Engineers (Signal Service) in the war of 1914-18. Returning to the Fitting Shop, Eastleigh Works, in 1919, he held a number of positions; he was appointed Running Shed Superintendent, Eastleigh, in 1945, and Assistant Western Divisional Superintendent of Motive Power, Woking, in 1947. Mr. Nicholson was transferred to the office of the Motive Power Superintendent in 1949 as Acting Technical Assistant. He was awarded the B.E.M. in the 1947 Honours List.

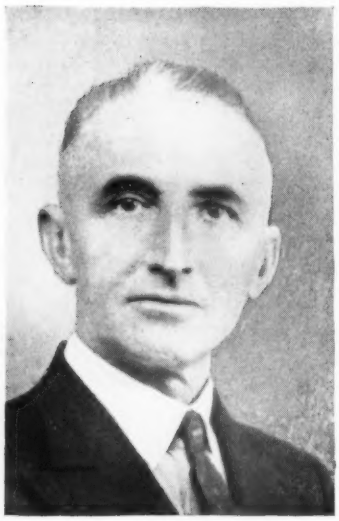
Mr. A. W. Johnston, who, as recorded in our March 10 issue, has been appointed District Motive Power Superintendent, Exmouth Junction, served his apprenticeship with the L.S.W.R. at Eastleigh, commencing in 1912. He saw service in the Royal Artillery and the Royal Flying Corps during the 1914-18 war. On demobilisation he returned to Eastleigh Running Shed, and after experience in various appointments, became Locomotive Shed Foreman, Tonbridge, in 1939, subsequently dealing with the Dunkirk evacuation traffic at that point, and other disorganisation consequent on enemy action in South East England. He was transferred to Dover in 1945, and to Exmouth Junction as Locomotive Running Shed Superintendent in 1947.

Mr. Gordon L. Nicholson, A.M.I.Mech.E., M.I.Loco.E., who, as recorded in our March 10 issue, has been appointed District Motive Power Superintendent, Stewarts Lane, Southern Region, was educated at Ryde School and entered the Southern Railway's Eastleigh Works in 1931 as a pupil of the late Mr. R. E. L. Maunsell. After training, he occupied various positions, including that of Foreman at New Cross Gate, from 1940. In 1943, in which year he was awarded the B.E.M., he became Assistant for the Isle of Wight, responsible to the Chief Mechanical Engineer and to the Divisional Operating and Commercial, and Motive Power Superintendents. He was transferred to Waterloo in 1946 as Outdoor Assistant to the Superintendent of Operation. He returned to the Motive Power Department in 1947 as an Assistant to the Motive Power Superintendent.

Mr. A. Forester Fielding, who has been appointed District Operating Superintendent, Leeds, North Eastern Region, was educated at Derby School and entered the service of the Midland Railway in 1921. After training at various stations and in the Chief General Superintendent's staff office at Derby, he occupied a number of positions, and in 1935 was appointed Assistant District Controller at Huddersfield. On mobilisation he was recalled from the Regular Army Reserve of Officers; he was taken prisoner in Belgium in 1940, and as a prisoner of war

Mr. W. H. Nicholson

Appointed District Motive Power Superintendent, Eastleigh, Southern Region



Mr. A. W. Johnston

Appointed District Motive Power Superintendent, Exmouth Junction, Southern Region

Mr. G. L. Nicholson

Appointed District Motive Power Superintendent, Stewarts Lane, Southern Region

passed the examinations of Associate Member of the Institute of Transport. Mr. Fielding resumed railway duty in 1945 as Assistant Divisional Controller (Freight Services), Manchester, and was promoted to Assistant District Operating Manager, Rotherham, in 1946. In 1948 he was appointed District Operating Manager, Wakefield, and later redesignated District Operating Superintendent. He is a Lt.-Colonel in the Royal Engineers, Supplementary Reserve.

Mr. John Taffs, Publicity Manager for The English Electric Co. Ltd., is retiring after 45 years' service. He joined Dick Kerr & Company in 1905, in the Estimating Department, and in 1911, was transferred to the Publicity Department, becoming Advertising Manager in 1913. After service in the Royal Naval Air Service in the 1914-18 war, Mr. Taffs returned to what had now become (in 1919) The English Electric Company, being appointed Advertising Manager in 1922. For a period he held the office of Joint Publicity Manager, becoming Manager of the Publicity Department in 1933. On his retirement Mr. Taffs relinquishes the Chairmanship of the B.E.A.M.A. Publicity Committee, of which he has been a member since its inception in 1924. He is a Member of the Executive and Financial Committees of the Incorporated Society of British Advertisers. He was also a Member of the Founding Council of the Audit Bureau of Circulations, becoming a Member of the Incorporated Advertising Managers' Association in 1938, and has served on the Publicity Committee of the British Internal Combustion Engine Manufacturers' Association since its formation.

Mr. Robert Hunter, Goods Terminal Superintendent, Commercial Superintendent's Office, Euston, who, as recorded in our June 23 issue, has retired, joined the Caledonian Railway in 1900. After serving in various appointments he became Chief Clerk in the Office of the Edinburgh District Traffic Superintendent in October, 1922, and was appointed Goods Agent at Edinburgh, L.M.S.R., in November, 1928. In 1937 he was appointed District Goods & Passenger Manager, Motherwell, and, in 1943, District Goods, Passenger & Docks Manager, Barrow. In 1944, he was appointed District Goods & Passenger Manager, Sheffield, and, in 1945, Deputy Goods Terminal Superintendent, Chief Operating Manager's Office, becoming Goods Terminal Superintendent in 1946.

Mr. W. Dunsmuir, District Motive Power Superintendent, Burntisland, has been appointed to the position of District Motive Power Superintendent, Glasgow (North), Scottish Region.

Mr. A. Forester Fielding

Appointed District Operating Superintendent, Leeds, North Eastern Region

Mr. John Taffs

Publicity Manager for The English Electric Co. Ltd., who is retiring

Mr. Robert Hunter

Goods Terminal Superintendent, Commercial Superintendent's Office, Euston, 1946-50

London Area Passenger Charges Scheme

Final stages of the Transport Tribunal inquiry

When the Transport Tribunal inquiry into the London Area (Interim) Passenger Charges Scheme was resumed on June 21, Mr. A. Capewell, K.C., continuing his closing speech on behalf of the Middlesex County Council, suggested that the British Transport Commission had shown a "considerable overcautiousness" in connection with its reserves.

They agreed that certain charges were necessary and that certain anomalies should be removed. They were afraid, however, that this increase now was not the only increase. If it was said that there should be an equation between London fares and Railway Executive fares, and they tied London fares in this way, then London fares must go up as a matter of principle. In dealing with the London area only, instead of the B.T.C. as a whole, the Tribunal did not have a complete picture before it, because there was no scheme in respect of passenger fares on the main-line railways. It was not necessary, when dealing with the abolition of trams for buses, that there should be at the same time a general scheme for the raising of fares, and they asked that the scheme should be modified and that anything relating to the general increase in fares should be delayed.

Mr. Moelwyn Hughes, K.C., for the L.C.C., said that there was no real difficulty in issuing return tickets on buses generally, and what was done on 700 buses in Newcastle could be done on 7,000 buses in London. Half the revenue of the London Transport Executive on workmen's tickets was gained by the issue of return tickets on trams and trolley-buses and country buses.

Five-Day Season Tickets

Suggesting a five-day season ticket, Mr. Hughes said the Tribunal must take note of the fact that about half of the workmen with whom the London Transport Executive dealt travelled five days a week and not six. He urged that cheap-day ticket facilities should be made available on those periods of the day when trains were empty. He submitted finally that the B.T.C. had not justified an overall increase in fares on the people of London.

Mr. N. R. Fox-Andrews, K.C., then spoke on behalf of the National Union of Ratepayers' Associations, and said that, although some of the members were outside the London area, they were concerned about the repercussions, if the scheme is approved, on those districts immediately surrounding the London area. He agreed that plenty of examples could be given where in a particular area, in particular services, it would be quite wrong if the equalisation of fares was not applied, but it did not mean the principle ought to be applied universally.

The worst feature of the scheme, remarked Mr. Fox-Andrews, when the inquiry was resumed on June 22, was the abolition of the 2½d. fare. The elimination of the 2½d. fare brought about an immediate departure from the proposed fare standard of 1·25d. a mile. The biggest percentage increase was being made on the most popular and important fare. There was an excellent opportunity for mitigating the lot of the individual traveller by extending the inter-availability of tickets on the three types of transport.

Sir Shirley Worthington Evans, for the City of London Corporation, drew attention to the suggestion that the fares scale should be based on a level charge of 1·2d. a mile instead of 1·25d. a mile as proposed in the scheme. While this would result in a reduction of £923,000 in the net revenue yield, it was a practical suggestion which was fair to everybody and moderate in size.

Mr. D. J. Turner Samuels, for the London Trades Councils, said it was clear from the evidence that the workers of London could not afford the increase proposed. They were going to pay £1,900,000 extra in fares and that was a disproportionate percentage over the whole of the country.

Mr. H. G. Chapman, for the Clerical & Administrative Workers' Union, suggested that the scheme should be modified to provide early morning workmen's tickets for all journeys before 9 a.m. on trains and buses. The changeover from trams to buses, with which the scheme was planned to coincide, would result in substantial saving, and he suggested that this would more than cover the cost of extending workmen's tickets.

Mr. G. R. Rougier, for the Southend Corporation, said it was true that the travellers on the London, Tilbury & Southend line in the past had travelled on more favourable terms than those in other areas, on comparison of cost per mile, but the reasons for that were that the line was cheap to construct and cheap to run. The Commission expected to receive £281,000 more from the passengers on this line and that meant that the scheme would result in Southend travellers subsidising travellers in other areas. The low fares to Southend had enabled people to live a long way out from London because they had a small additional burden of travel to pay and the net result was that Southend had been developed on the principle of cheap fares.

On June 23, Mr. Dudley Collard, for the Essex County Council and others, said it was regretted that after a period of 2½ years' gestation the B.T.C. could only produce a local and temporary scheme instead of producing something to cover the whole country. It did seem that the Commission wanted to remove what it thought were anomalies and what the travelling public considered were concessions.

A percentage rebate for people travelling over ten miles to their work in London to alleviate the hardship of the proposed increases was suggested by Mr. P. B. Showan, for the North Watford Ratepayers' Association, who maintained that to people in dormitory towns like Watford, the increases would mean an unavoidable levy which they could not afford. It should not be beyond the competence and power of the London Transport Executive to apply such a rebate on a reasonable scale for the benefit of all classes of passengers. Suggesting that the question of a rebate should be explored, he pointed out that daily workmen's fares over 1s. produced an annual revenue for the London Transport Executive of £272,810, which was only 9·2 per cent. of the total receipts.

Mr. N. A. Citrine, for the T.U.C., suggested that the Tribunal should reject the scheme until a scheme or schemes for the whole of the country were ready. The B.T.C. deficit was a national burden which the T.U.C. considered should be dealt with on a national basis. He also suggested that it might be necessary to approach the Government for a short-term subsidy to assist the Commission over the early period of its existence.

Final speeches for the objectors to the scheme were continued when the inquiry was resumed on June 27. Mr. J. Ramsay Willis, for Surrey County Council, said he wished to reinforce the plea for the retention of the 2½d. fare. If the Tribunal decided that the scheme should be approved a large number of people would feel the hardship of the increase in this fare.

Two other matters which he asked the Tribunal to take into account were the introduction of season tickets on buses and the extension of the half-fare for children up to the age of 15. He pointed out that combined rail and road seasons already existed and the extension of the system to buses was a logical one. This system was not subject to abuse.

Mr. R. Reader Harris, for the London Passengers' Association, called for economies and improvements in transport. It was quite wrong for the Commission to ask for a great increase in London fares, without first of all persuading Londoners it had done everything it possibly could to avoid these great increases. There had been no evidence that the B.T.C. had made any efforts to cut down their costs and make all possible economies.

Call for 1d. Fare

The proposals must be looked at in relation to the whole cost of living and if they were carried into effect it would mean the "coup de grace" for the wage freeze. Asking the Tribunal not to confirm the scheme in its present form he suggested that they should insist on the provision of the 1d. fare again. This could be done by shortening the stage.

He also proposed that the trade unions and the London Transport Executive should get together at an early stage to consider the relaxation of the five-standing rule. While agreeing that workmen's fares at the moment were low, he felt that the proposed increase was too great, and, finally, he contended that this was not the time to introduce a scheme of such a drastic nature.

The Tribunal, having heard all representations on behalf of objectors, adjourned the hearing until Wednesday, June 28, when Mr. Lionel Heald, K.C., made his final speech on behalf of the British Transport Commission.

BRITISH RAILWAYS BUS TERMINAL AT SKEGNESS.—A new bus station and luggage depot for patrons of Butlin's Holiday Camp has been constructed by British Railways at Skegness Station at a cost of about £12,000. The station consists of two covered platforms, one for buses conveying rail passengers to the camp and the other for buses bringing passengers from the camp for departure by rail. The luggage depot, staffed by Butlins, is situated between the platforms, and is fitted with racks and counters, with access for lorries. Separate lavatory accommodation for incoming and outgoing passengers is provided. Simplicity is the keynote of the construction throughout. The building was designed in the office of the Civil Engineer, Eastern Region, Kings Cross, and the main contractors for the work were Tersons Limited.

Ministry of Transport Accident Report

Mangotsfield, London Midland Region, British Railways: September 30, 1949

Mr. J. A. Sinclair, Railway Employment Inspector, Ministry of Transport, inquired into the accident which occurred at about 7.30 p.m. on September 30, 1949, at Westerleigh North Junction, Mangotsfield, between Gloucester and Bristol, when the 1.58 p.m. parcels train, Derby to Bristol, travelling on the down main line at high speed, came into contact with an open door of a van, stationary on the up line and forming part of a 50-wagon train drawn out of a siding.

The passed fireman on the engine, No. 44745, class 5, mixed traffic, who was looking over the side of the cab, received a fatal blow on the head. The driver brought the train to rest as quickly as possible and the injured man was taken speedily to hospital. It was found that a door of a banana van was open and damaged. The other was intact, but not quite closed, as the securing mechanism was in the locked position with both bolts against the outside of the slots; the safety catch, designed to prevent the operating handle from lifting, was not engaged.

The door was probably fully open at the time of the accident, as the vehicle was on a curve. Mr. Sinclair examined it, and found the boards of the sides to be decidedly loose, although that might have been due to the exceptionally dry weather in the summer. Movement in the joints of the framework was less pronounced. There was considerable wear in the bolting gear, and the operating lever would not remain horizontal, but fell to the vertical position by its own weight. From the locked position the lever had to be raised approximately 120 deg. before the top bolt would withdraw from the socket and another 30 deg. were required to release the bottom one.

The wagon had arrived empty at the sidings during the night prior to the accident, and no guard, wagon examiner, yard inspector, or police officer—the last named was looking for doors which might be open irregularly—found anything wrong. The shunter who, at about 6.45 p.m., had to prepare the train for shunting over to the down side, stated that, although the wagon was one of the five rear vehicles, he did not notice any open door when he passed beside the train in the 6-ft. space between the main lines to intimate to the driver that it was clear of the points.

He had little opportunity for examining the vehicle closely as he noticed the signals clear for a down train and hurried back to the cess before his own train had come to rest. Nevertheless, he could hardly have failed to see the door, had it been swinging open, as he had to look past it when signalling to the driver.

Mr. Sinclair considers it to be improbable that the bolts released themselves, and that it may be assumed that the doors were left unbolted when they were last opened. In all probability the trailing one swung outwards when the train stopped and remained in that position as a result of the super-elevation.

Mr. Sinclair was informed that members of the staff had been known to open the doors of banana vans in search of fruit overlooked during unloading. A few bananas were actually found in this van after the accident, and it is considered more likely that the doors were opened for the same purpose by some unknown person, probably towards the end of the period when the vehicle was in the sidings. If so, the shunter was the only man who might be reasonably considered as having had an opportunity of noticing that the doors were not fastened.

It would be unreasonable, however, to expect a shunter to be responsible for making a detailed examination of all vehicles with which he has to deal during shunting. He cannot do more than give them a general lookover. Mr. Sinclair does not attach blame to him, therefore, and considers that the responsibility for the accident must rest on the unknown individual who failed to fasten the doors on the last occasion that they were opened.

Inspector's Recommendation

This is the third instance within just over twelve months of an engineman losing his life as a result of a van door being improperly secured. It emphasises still further the need, expressed in a report on a previous fatality in which a banana van also was involved, for close scrutiny of all doors and fastenings during transit. That such a van was again involved cannot be regarded, Mr. Sinclair thinks, as a mere coincidence, and he hopes that active measures will be taken to counteract what appears to be a regrettable tendency on the part of the staff to tamper with these vehicles.

Because of the circumstances of these two accidents it is recommended that the security of banana van doors should be specially verified before they are drawn from sidings to a running line.

Questions in Parliament

Compensation to Road Hauliers

Mr. Stanley Prescott (Darwen—C.) on June 19 asked the Minister of Transport what was the total sum by way of compensation still outstanding to road hauliers.

Mr. Alfred Barnes (Minister of Transport), in a written answer, stated: Up to May 31 last, sums totalling £19,300,000 had been paid in respect of road haulage undertakings compulsorily acquired by that date, leaving a balance of approximately £1,400,000 in respect of provisional ascertainments. The outstanding amounts will be settled as soon as all the necessary legal formalities have been completed. It will not be possible to give an estimate of the total amount of compensation which will become payable in respect of the whole operation of acquiring long-distance road haulage undertakings until the extent of the assets yet to be taken over has been agreed or determined.

Brigadier F. Medlicott (Central Norfolk—Nat. Lib.) on June 19 asked the Minister of Transport if he was aware of the dissatisfaction caused to many transport concerns by the slowness in the payment of compensation due to them following upon nationalisation; and if he would take steps to expedite the settlement of all the outstanding claims.

Mr. Alfred Barnes stated in a written answer: I am not aware of general dissatisfaction over the payment of compensation to road transport concerns. The Commission are taking all steps which the Transport Act permits to expedite settlement, but progress in the majority of cases is governed by the availability of accounts and other essential information which only the transferors can supply.

Fire Precautions in Trains

Lord Clydesmuir in the House of Lords on June 20 asked if the Government could make any statement on fire precautions in railway carriages, having particularly in mind the recent accident at Beattock in which five persons lost their lives through the rapid spread of fire.

Lord Lucas of Chilworth (Parliamentary Secretary to the Ministry of Transport): The accident at Beattock on June 8 is under formal inquiry by an Inspecting Officer of Railways, who is, during the course of his investigation, considering the general question of fire precautions in railway carriages. Until the Inspecting Officer's report is received I am not in a position to make any statement.

Lord Clydesmuir: There have been six fires since the beginning of May. Does this not point to some highly inflammable substance being used on trains? Will Lord Lucas use every endeavour to allay public anxiety on this point?

Lord Lucas: It would be highly improper for me to make any observation until all the facts have been investigated.

The Earl of Selkirk: If investigation is proceeding, could it not include investigation into sleeping cars, both first class and third class? It is impossible to open the sleeping car windows wide enough to enable occupants to get out in the event of fire occurring at one or other end of the carriage.

Lord Lucas: All the facts are being considered by the Inspector conducting the inquiry.

Train Fire Inquiry

Commander T. D. Galbraith (Glasgow, Pollok—C.) on June 20 asked the Minister of Transport, whether he would make a statement as to the cause of the fire which occurred in the 11.15 a.m. train from Birmingham to Glasgow on June 8, resulting in the death of five passengers; and what action, if any, he considered possible to prevent a recurrence of such an accident.

Mr. Alfred Barnes (Minister of Transport) stated in a written answer: An inquiry into this accident is being held by an Inspecting Officer of Railways and until his report is received I am not in a position to make any statement.

Transport Costs in Scotland

Lord Malcolm Douglas-Hamilton (Inverness—C.), on June 21 asked the Prime Minister whether, in view of the burden of high transport costs, bearing particularly heavily on the people living in the remote areas of the Highlands and Islands, and in view of the aggravation of that burden from the recent increase in freight charges and in petrol tax, he would appoint a Royal Commission to inquire into transport costs as they affected life in all remote rural areas.

The Prime Minister (Mr. C. R. Attlee): No. The burden of transport costs on remote rural areas is appreciated, but I should not be justified in recommending the appointment of a Royal Commission. A draft Charges Scheme for merchandise traffic is now being prepared by the British Transport Commission for submission to the Transport Tribunal. There will be a full opportunity of making representations to the Tribunal, at a public inquiry, on behalf of users in remote rural areas.

Parliamentary Notes

British Transport Commission Bill

The British Transport Commission Bill, as amended, passed the Report stage in the House of Commons on June 21.

Mr. J. A. Boyd-Carpenter (Kingston-upon-Thames—C.) criticised Clause 30 of the Bill, which sought to permit the maintenance of railway by-laws in an office, accessible on demand, instead of their display on the front of every station, as hitherto, in accordance with the Railway Clauses Act of 1845.

Mr. Boyd-Carpenter then drew attention to Clause 31, which contained previsions for increasing the penalties for breaches of the Transport Commission's by-laws. If, he said, that was to be done at all in our criminal law, it should be done by general Act, and not by a Private Bill.

Turning to Clause 36, which dealt with the relationship between, on the one hand, the works authorised by the Bill to be undertaken by the railways and, on the other, the Town & Country Planning Act, Mr. Boyd-Carpenter said that it did not subject the railways to the inconveniences which the Town & Country Planning Act inflicted on almost everyone else, of paying a development charge before the work was done. He would be grateful if the Minister would explain whether it brought into the Bill not merely the general provisions of the Act, but the particular provisions relating to the development charge. They had not had any indication of how those works were to be financed, or of the actual policy of which they were the physical development.

Mr. Alfred Barnes (Minister of Transport) said the total cost of the proposed works was £306,000, which did not represent a substantial outlay of capital, taking the responsibilities of the Commission into account and the need to meet industrial and other developments. The money would come from the capital resources of the Commission and the figure indicated that that would not be much of a strain. The Town & Country Planning Clause did not give favourable consideration to the B.T.C., but was a standard Clause which the Minister of Town & Country Planning had himself required to be inserted. Without it the Minister would not be able to vary the works for which the Bill made provision even if they were objectionable on planning grounds.

Referring to Clause 30, Mr. Barnes did not consider there was much substance in the criticism of variation of the 1845 provisions. Since then, many Acts of Parliament had been passed in which there had been laid down a common procedure in regard to local authorities' and statutory undertakings' by-laws. New systems of laws governing statutory corporations had grown up. It was only right that the Commission should use the normal procedure of the House. One reason for the change was that the Chairman of the Committee on the Bill last year pointed out that many by-laws were obsolete. The Bill had gone through the procedure laid down by the House.

With regard to the penalties that Clause 31 imposed, Mr. Barnes said there were a whole series of modern Acts approved by the House in recent years, which dealt with this type of practice. As a general rule, Parliament had fixed this scale of penalties for that type of offence, and the B.T.C. had sought to bring the scale into line with common practice.

Mr. David Renton (Huntingdon—Nat. Lib.) drew attention to the "somewhat sordid arrangement" between the B.T.C. and the Minister of Town & Country Planning which had, or would have, the effect of spoiling the "green belt" to the advantage of the Commission in a way that no private enterprise concern would have been allowed to do. He referred to the site at Ickenham.

Mr. Barnes said that the London Transport Executive was compelled to search extensively to meet the requirements of the Minister of Town & Country Planning.

Mr. Renton, continuing, said that the combined effect of Clause 36 of the Bill and Section 13(4) of the Town & Country Planning Act, 1947, was that the Minister might entirely exclude or modify the provisions of the Transport Commission Bill.

A very strong point, said Mr. Renton, had been made regarding publication of by-laws. How would it come to be proved in a court of law that a copy was available? Passengers, especially if they were carrying valuable articles when travelling, sometimes wanted to know what was the liability of the railway for accidents and loss of baggage, or personal injuries.

The Bill was read the third time and passed.

Staff & Labour Matters

T.U.C. Wages Policy

The A.E.U. and T.& G.W.U. have voted against a strike in support of the claim for a £1 a week wage increase. The General & Municipal Workers' Union has already announced that the majority of its members is not in favour of a strike, as has the Amalgamated Union of Foundry Workers. In view of the results obtained by these four, which are some of the biggest of the 37 unions affiiliated to the C.S.E.U., it is almost certain that the strike will be averted and the claim go forward to arbitration. The final results of the whole of the C.S.E.U. unions' voting will be announced on July 13.

The T.U.C. special economic committee reported on June 28 to the General Council on wages restraint, and an outline of the report has been given to the Chancellor of the Exchequer. On June 22 the National Federation of Building Trades Operatives decided at its annual conference that it could no longer support wages restraint, and urged immediate application for a substantial wage increase.

Western Region Pension Scheme

The Railway Executive has proposed that the Western Region (former G.W.R.) Enginemen, Firemen & Cleaners Mutual Assurance Society's pensions and assurance scheme, which is at present compulsory, be made voluntary from July 1. Members of the Society at Newton Abbot and elsewhere have been considering strike action as from midnight tonight (Friday) failing a change of attitude on the part of the Executive and protests have been sent to the Minister of Transport and the Chairman of the Railway Executive. The A.S.L.E. & F. as such has, at the time of going to press, taken no official action; but its national president, Mr. F. Kelland, has said that all Western Region branches of the union had been circulated and that feeling was strong.

The British Loading Gauge

As a considerable portion of the railway system of Great Britain was built in the early years of railway enterprise, structure gauges were often more restricted than is convenient for modern operation. The widest structure gauge was that on much of the Great Western Railway and some of its associated companies, by reason of the original adoption of a 7-ft. track gauge.

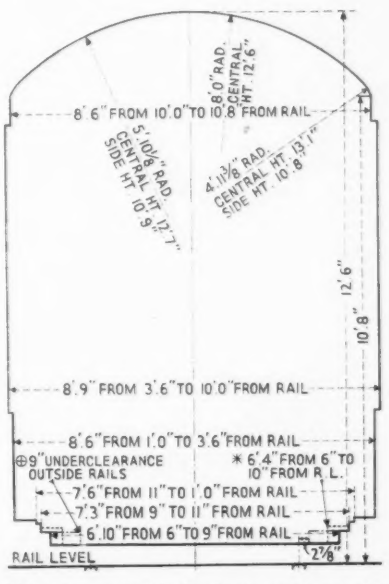
With long bogie stock, a further restriction is imposed by the need to allow for overhang on curves. As a result, British Railways has inherited a system of lines on which the largest vehicles can have but limited circulation, and, although main-line passenger rolling stock often has maximum dimensions of 13 ft. 6 in. in height from rail level, and 9 ft. 6 in. to 9 ft. 8 in. in width overall, such stock is restricted as to the sections of line upon which it may be used.

The profile reproduced has been prepared by the Railway Executive as representing the largest bogie stock suitable for general working, apart from tube railways and a few specially-restricted places.

This gauge represents a profile for a wagon 17' 6" long and with a 10' 0" wheelbase suitable for general working (except over tube railways and other specially-restricted lines and places). In the event of the wheelbase (or bogie centres) or length being greater than described above, a reduction in the widths shown may be necessary to allow for increased "throwover" on curves.

Rail underclearances and heights from rail level to 3' 6" from rail level are minimum after full drop due to wear, etc., has occurred. The heights above 3' 6" from rail level must not be increased to compensate for this drop.

On the electrified portion of the Manchester & Bury Line and the Tottington branch, the rail clearances must be as marked ✱; on the Loftus & Whitby Line, under clearances must be as shown ⊕.


8' 6" FROM 10' 0" TO 10' 8" FROM RAIL
5'-10⅛" RAD. CENTRAL SIDE HT. 10' 9" HT. 12' 7"
4'-11⅜" RAD. CENTRAL HT. 13' 1" SIDE HT. 10' 8"
12' 6"
10' 8"
8' 9" FROM 3' 6" TO 10' 0" FROM RAIL
8' 6" FROM 1' 0" TO 3' 6" FROM RAIL
⊕9" UNDERCLEARANCE OUTSIDE RAILS
✱ 6' 4" FROM 6" TO 10" FROM R. L.
7' 6" FROM 11" TO 1' 0" FROM RAIL
7' 3" FROM 9" TO 11" FROM RAIL
6' 10" FROM 6" TO 9" FROM RAIL
RAIL LEVEL
2⅞"

Profile showing maximum width and height permissible for bogie stock suitable for general working over British Railways, apart from special restrictions

Planning the New Oslo Central Station

Combined terminus and through station to replace two disconnected termini

As reported in our issue of July 18, 1947, important railway works are being planned in the Oslo area. A special committee appointed in 1938 had recommended the integration of the Oslo railway systems. Oslo West Station is to be abandoned and the Western lines are to be projected in tunnel under the town centre to Oslo East Station which will be converted into a Central Station serving all lines radiating from the town.

A preliminary architectural contest, held in 1946, for the design of the new station building was won by the architects John Engh and Peer Qvam, who later were called on to work out a revised scheme having regard to modifications both in the track layout and in the remodelling of the adjacent streets meanwhile decided on. The revised plans, worked out in collaboration with a standing committee of railway and town planning experts, have now been published in the May, 1950, issue of our Norwegian contemporary *Byggekunst*.

From the size and importance of the proposed station the scheme must be regarded as an outstanding railway works. The new station will accommodate 13 terminal platform roads for the eastern lines and eight through roads for the western lines emerging from the tunnel. The combination of a head-on terminus and through station resembles London Bridge station, but, at Oslo, it is the terminus which will be on a higher level than the through platforms.

Different Levels

The skilful use of the differences of levels is the outstanding feature of the plan. Circulating areas for both parts of the station, and for passengers and luggage, are arranged at different levels, connected by stairs, and ramps not steeper than 1 in 10.

The main entrance hall faces Railway Square opposite Karl Johans Gate, the main business street of Oslo. The large entrance hall and the smaller exit hall are situated at or just above street level (7 ft. 2⅝ in. above ordnance datum). On the same level are the premises for outgoing, incoming, and left luggage in the rear of the entrance and exit halls, from which a system of luggage tunnels and ramps leads to the various platforms. Passengers ascend a 1 in 10 ramp, 72 ft. 2½ in. wide, to the main circulating area on the 17 ft. level, which is slightly above the level of the terminal platforms (14 ft. 9⅛ in.) stretching out from the main circulating area. Here are the ticket barriers for the terminal platforms. Where the latter adjoin the lower-lying through platforms (11 ft. 8½ in. level), the main circulating area is connected by an ascending ramp with the upper circulating area (25 ft. 11 in. level) which runs across the through platforms and is connected with each of the island platforms by a 1 in 12 ramp as well as stairs.

At the far end of the upper circulating area is a secondary entrance and exit. The circulating areas will normally be used for incoming as well as outgoing traffic. On peak days of outgoing traffic the incoming traffic can be diverted to an auxiliary exit which by-passes the circulating areas and leads direct to the exit hall at street level. The platforms are 24 ft. 11¼ in. wide. Special luggage platforms were not regarded as necessary, especially as all mail and express goods traffic will be dealt with at the far end of the platforms, which are accessible through separate tunnels and lifts.

On the 20 ft. 4¼ in. level, slightly above that of the main circulating area and corresponding to the first floor of the main station building, are the various ancillary premises of the station, such as waiting rooms, restaurant, and post office. All these premises are connected by the corridor which forms a gallery along the flank of the main circulating area opposite the platform ends. This gallery is extended as a shopping arcade to a further secondary exit across the tunnel mouth of the through tracks.

The station itself will be surmounted by a multi-storied administration building for the head offices of the Norwegian Railways and for their Oslo District Offices. Provision is also made for a garage with accommodation for 200-300 cars. The detailed plans for the building have yet to be finalised.

Heavy-Duty Diesel Tractor

An important project is being undertaken by the Iraq Petroleum Company which includes the laying of an oil pipeline from Kirkuk in Iraq to Banigas on the Eastern Mediterranean. In connection with this scheme the firm of Transport Equipment (Thornycroft) Limited has designed a heavy-duty tractor to operate with semi-trailers, and the whole has a gross weight of 100 tons. Orders for 37 have been placed, and the prototype has recently undergone successful trials at Bagshat.

The power unit has been designed and built by the Rover Co., Solihull, Birmingham, and consists of a Meteor Mark 101, 8-cylinder, 18-litre, V-shaped diesel engine developing 250 b.h.p. at 2,000 r.p.m. The design of the transmission is such that the clutch is separated from the power unit, being driven by a short shaft; by this arrangement the power unit can be removed without interference with the transmission unit.

The clutch mechanism is of the two-plate dry friction type, 18 in. dia., power being assisted by a Clayton Dewandre air-pressure servo unit. Thornycroft tyre-inflation equipment has been fitted, consisting of three air reservoirs and a 15 cu. ft. compressor. The electrical equipment has been provided by C.A.V. Limited, Acton, London, W.3.

PATAGONIAN NATIONAL RAILWAY.—The passenger service on the Patagonian National Railway between Puerto Madryn, Trelew, and Dolavon is to be replaced by buses at an early date, but goods trains will continue to run.

Heavy-duty Thornycroft diesel tractor with Rover engine, suitable for conveying wooden sleepers, rails on pallets, and other materials over rough ground (see article above)

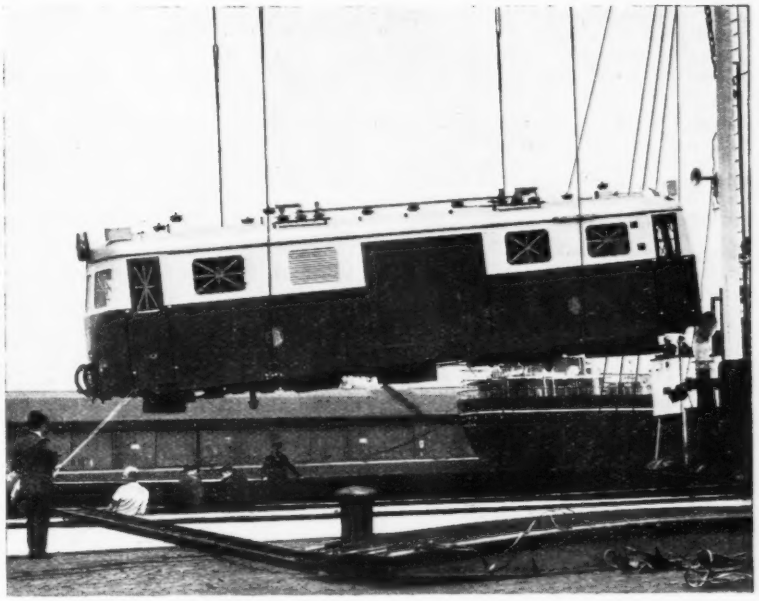
Mixed-Traffic Locomotives for Portugal

British-built machine for service on the 5 ft. 6 in. gauge Estoril Railway

The 960-h.p., 1,500-V. mixed traffic electric locomotive included in the order for rolling stock placed with the General Electric Co. Ltd., by the Estoril Railway, Portugal, has now been shipped to Lisbon, with the last two trailer coaches for the multiple-unit trains supplied by the company, and described in our issue of May 19 last. These deliveries complete the first order for electric rolling stock ever placed with a British manufacturer by any Portuguese railway.

The locomotive is carried on two two-axle motor bogies, each with two 750-V. force-ventilated, axle-hung traction motors. Six economical running speeds are available, the electro-pneumatic control equipment being arranged for series and series-parallel connection of the motors, with two weak-field steps in each combination. Maximum speed is 50 m.p.h. The mechanical parts have been built by the North British Locomotive Co. Ltd., Glasgow.

The locomotive has been designed for hauling passenger trains of 300 tons or goods trains of 600 tons on the line from Lisbon to Estoril and Cascais, where the maximum gradient is a stretch of about three-quarters of a mile at 1 in 80.



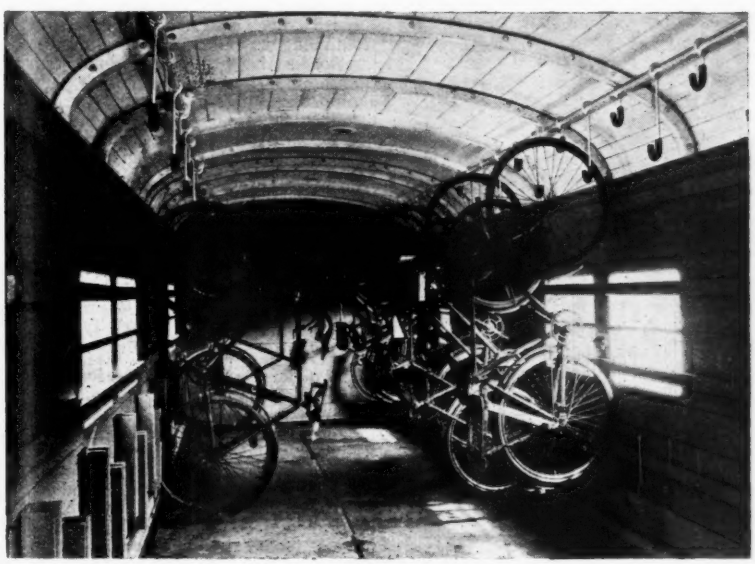
G.E.C. Bo + Bo mixed-traffic locomotive for the Estoril Railway, Portugal, being loaded at Glasgow for shipment to Lisbon. The mechanical parts have been built by the North British Locomotive Co. Ltd.

Notes and News

Temporary Drawing Office Assistant Required.—A temporary assistant, aged about 40 years, is required for a railway civil engineer's drawing office in London. See Official Notice on page 751.

Large Leyland Bus Order for Cuba.—An order for 620 buses for Autobuses Modernos S.A., of Havana, Cuba, believed to be the largest single dollar order obtained by a British firm, has been secured by Leyland Motors Limited. The vehicles are single-deck "Royal Tigers," 31 ft. 6 in. long. The all-metal bodies, which seat 40, with ample room for standing passengers, have been specially designed for service in Havana by Saunders Engineering & Shipyard Limited, of Beaumaris.

Experimental Van for Cycle Conveyance.—To assist in conveying the increasing number of bicycles taken abroad the Southern Region of British Railways is putting into service experimentally on the Victoria-Newhaven boat trains a specially-fitted van for bicycles. After examination of the methods used by the Continental railways and consultations with cycle manufacturers the conclusion was reached that the most suitable method of conveying cycles is to suspend them by the front wheels. The van is therefore equipped with rigid hooks spaced 12 in. apart suspended from the roof and running down each side of the vehicle. Long and short rubber covered hooks are arranged alternately to avoid interlocking of handlebars. Although at present the van is fitted to take 47 bicycles (30 on one side and 17 on the other) it will eventually be equipped to hold 60 cycles, 30 on each side.



Southern Region van fitted for carrying cycles (see paragraph above)

Chinese Railway Construction.—Construction of a railway linking Chengtu, capital of Szechuan Province, with Chungking, has begun, according to an agency message received in London. The 330 miles of line, which will facilitate the rapid flow of Szechuan produce, such as rice, salt, sugar, and tung oil, to the Yangtse, is scheduled to be completed before the end of 1952.

Suspension of Railway Services in Ulster.—The Ulster Transport Authority announces that from July 3 the following sections of the former L.M.S.R. (N.C.C.) now used for goods services only, will be closed:—Limavady to Dungiven, Magherafelt to Draperstown, King's Bog Junction to Ballyclare, and Larne Harbour to Ballyclare (narrow gauge).

Ball and Roller Bearing Plummer Blocks. The British Standards Institution has recently published B.S. 1642 : 1950, ball and roller bearing plummer blocks (general purpose series), which lays down the leading dimensions essential to ensure satisfactory installation and interchangeability of a series of ball and roller bearing plummer blocks for shafts ranging in dia. from ¾ in. to 3 in. The standard relates to the main dimensions; centre heights, bolt centres, bolt dia., and maximum overall widths, lengths and heights; it does not deal with design, or with the materials from

which the plummer blocks are made. Copies may be obtained from the British Standards Institution, Sales Department, 24, Victoria Street, London, S.W.1, price 1s., post free.

Canadian Pacific Preference Dividend.—At a meeting of the board of directors of the Canadian Pacific Railway on June 12, a dividend of 2 per cent. on the preference stock in respect of 1950 was declared payable on August 1.

Chinese-Russian Rail Link.—An agency message states that the Chinese Communist authorities in Peking have announced the start of a train service between China and the Soviet Union linking Manchouli in north-western Manchuria with Moscow by a six-and-a-half day journey. The service, suspended since 1931 when Japan occupied Manchuria, will make it possible to travel from Hong Kong to Moscow in about a fortnight.

Government Steel Factories to Close.—Two Government owned steelmaking factories, at Monk Bridge, Leeds, and Paisley, Lanark, are to be closed as from December 31 next. The former was bought, and the latter built, by the Ministry of Supply for war requirements. With the expansion in output of steel now being achieved, the capacity for producing crude steel will shortly be in balance with the rolling and finishing capacity and the stop-gap task of the two works will be completed.

British Electric Traction Company.—A final dividend of 17½ per cent. (35 per cent. for 1948-49) is proposed on the deferred stock of the British Electric Traction Co. Ltd., making 32½ per cent. for the year (50 per cent.) and a dividend of 17½ per cent. on the "A" deferred stock, which was issued to deferred stockholders as a capital bonus (200 per cent.) in December, 1949. The amount absorbed by dividends is £293,567 (£217,457); but it is pointed out that the total amount proposed to be distributed on the deferred stocks for the year is equivalent to 22½ per cent. on the total deferred stocks of £2,372,256 as increased by the bonus issue, and compares with 50 per cent. on the deferred stock of £790,752 for the previous year. The aggregate net profit of the group was £1,350,266 (£1,177,989), after £921,340 (£935,808) tax. The profit includes net profits of a subsidiary amounting to £411,618 for a full year, whereas for the previous year £269,727 for a period of nine months only was included. Allowing for minority interests, the proportion of the aggregate net profit attributable to the parent company is £1,172,628 (£991,375), and the net profit of the parent company is £638,031 (£704,101), including special additional net revenue of £73,895.

American Railway Strike.—Five United States railways are involved in the strike of 4,000 members of a shunters' union, which is demanding a 40-hr. week at 48-hr. pay. They are the Chicago Rock Island & Pacific; Denver & Rio Grande Western; Chicago & Great Western; Western Pacific; and Great Northern. The last-named is affected least as only 60 of its 15,000 shunters are members of the union concerned.

Ribble Motor Services.—A final ordinary dividend for the year ended March 31 of 10 per cent. is to be paid by Ribble Motor Services Limited; this, with 5 per cent. bonus, makes an unchanged total distribution of 25 per cent. Including the results of the parent company for a year and those of a subsidiary for 18 months, and after charging tax of £108,627 (£107,169), the group profits were £558,630 (£483,756 for 1948-49).

Guest, Keen & Nettlefolds Results.—A final ordinary dividend for 1949 of 7 per cent. is recommended by the directors of Guest, Keen & Nettlefolds Limited, making 11 per cent. for the year on the capital as increased from £9,026,520 to £11,283,150. In addition, a jubilee bonus is proposed of 1½ per cent. Ordinary dividends paid for the previous period, which covered nine months for the holding company and 12 months for most of the subsidiaries, consisted of an interim of 4 per cent. and a final of 6 per cent. The results for 1948 are not strictly comparable with present figures by reason of the change in the accounting period in 1948. Group profit for 1949, after all charges, was £2,888,098, compared with £2,918,682 for the previous period ended December 31, 1948. Total income amounted to £3,761,436 (£3,395,899) and included exceptional items amounting to £873,336 (£477,217).

Closing of Barton Goods Depot.—British Railways goods depot at Barton, Darlington, will be closed for traffic after July 1. Alternative facilities for goods and livestock traffics will be available at Forcett, Scorton, Moulton, Piercebridge, Croft Spa, and Darlington.

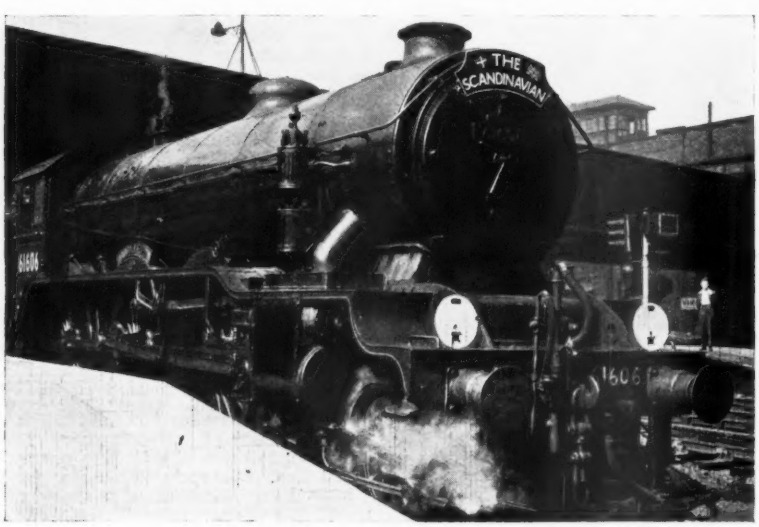
Telescopic Gangways for Southampton.—At the invitation of Almin Limited, Farnham Royal, Bucks, representatives of the press inspected, on Tuesday, June 27, a prototype telescopic gangway being built by Structural & Mechanical Development Engineers Limited, 2, Buckingham Avenue, Slough. Three complete units are being built, consisting of shore stations, each with two telescopic gangways which can be slewed, luffed, extended, and telescoped, and they will be used in conjunction with the three-storey building now under construction at Southampton Docks, designed principally for the reception of the "Queen" vessels of the Cunard White Star Line.

Maidstone & District Motor Services.—A final ordinary dividend of 10 per cent. is recommended by the board of the Maidstone & District Motor Services Limited, which, with a bonus of 5 per cent., makes 25 per cent. for the year ended March 31 (as for the previous year). After depreciation of £122,464 (£98,836) and tax of £110,565 (£107,834) net profits were £266,295 (£249,485). The general reserve is allotted £151,265 (£100,000) and £173,268 (£168,513) is to be carried forward.

Newburgh & North Fife Line.—As from Monday, July 3, the Scottish Region passenger train services between Perth and Dundee *via* Newburgh and St. Fort will be withdrawn. The stations on the North Fife line at which passenger train services will cease are Lindores, Luthrie and Kilmany and passengers for these places will be served by buses from Cupar. Passenger train parcels and miscellaneous traffic will continue to be dealt with at Lindores, Luthrie, and Kilmany Stations, which will remain open for freight train traffic as at present.

Eastern Region Engine Headboards.—Continuing its policy of providing attractive locomotive headboards for its named trains, the Eastern Region has now equipped the "Scandinavian," the "Day Continental," and the "Hook Continental" with new boards which embody in colour the flags of the nations appropriate to the service. On the headboard of the "Scandinavian," which runs from Liverpool Street in connection with the service to Esbjerg operated from Harwich by the United Steamship Company, Copenhagen, the Danish flag is shown at top left, and the Union Jack at top right. The first of the Eastern Region named trains to be fitted with a new type board was the "White Rose."

Eastern Region Staff Discussions.—Continuing his policy of making personal contact with the staff, Mr. C. K. Bird, Chief Regional Officer, Eastern Region, British Railways, visited Norwich on June 19, and took the chair at a meeting attended by local departmental committee and other staff representatives. Forty-five local departmental committees and shops committees, including committees at Norwich, Cambridge, Ipswich, and Yarmouth, each sent two representatives, while the Chair-



Eastern Region engine with new headboard ready to leave Liverpool Street Station with the "Scandinavian" express (see accompanying paragraph)

OFFICIAL NOTICES

ASSISTANT (Temporary) required for Railway Civil Engineer's Drawing Office in London. Age about 40. Design of reinforced concrete and steel structures; foundations; preparation of contract documents (experience in pre-stressed concrete work an advantage). Apply in writing, giving particulars of qualification, experience, etc., to Box 772, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE FIRST PASSENGER RAILWAY. By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 136 years. Cloth 8¼ in. by 5¼ in. 91 pp. Illustrated. 5*s*. By post 5*s*. 3*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages. 9 in. by 12 in. fully illustrated. Paper cover, 5*s*. By post 5*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

FOR SALE.—Kendall & Gent 6-ft. Radial Drill, ready for immediate use. Price £200.—MODERN MACHINE TOOLS LIMITED, Maudslay Road, Coventry.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2*s*. By post 2*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE EVOLUTION OF RAILWAYS. Second edition, revised and enlarged. By Charles E. Lee. Traces the germ of railways back to Babylonian times. Cloth. 8¼ in. by 5¼ in. 72 pp. Illustrated. 6*s*. By post 6*s*. 4*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8¼ in. by 5¼ in. 82 pp. Diagrams. 5*s*. By post 5*s*. 3*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

WANTED for Peruvian Railways, Assistant Locomotive Superintendent, commencing salary £1,200, and Foreman for locomotive repair shop, commencing salary £800. Colloquial knowledge of Spanish essential.—Write Box "B.J.," c/o J. W. VICKERS & Co. LTD., 7/8, Great Winchester Street, London, E.C.2.

BRITISH WORK ON PERSIAN RAILWAYS. The achievements and difficulties of the R.Es. during the 15 months in which they laid the foundation for effective aid to Russia. Reprinted from *The Railway Gazette*, February 2 and 16, 1945. Price 1*s*. Post free 1*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

TRANSPORT ADMINISTRATION IN TROPICAL DEPENDENCIES. By George V. O. Bulkeley, C.B.E., M.I.Mech.E. With chapters on Finance, Accounting and Statistical Method. In collaboration with Ernest J. Smith, F.C.I.S., formerly Chief Accountant, Nigerian Government Railway. 190 pages Medium 8vo. Full cloth. Price 20*s*. By post 20*s*. 6*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

men of the employers' sides of these committees also attended. The N.U.R., A.S.L.E. & F., and the R.C.A. were represented, as were each of the five Regional Councils. Mr. Bird emphasised that the meeting was informal in character and was not to be regarded as in any way substituting the normal negotiating machinery. He then reviewed the revenue position in the Eastern Region, and quoted figures indicating the operating results obtained, showing that the average speed of both passenger and freight trains had improved since last year. Punctuality had also improved.

Southdown Motor Services.—A final ordinary dividend of 10 per cent. is to be paid by Southdown Motor Services Limited, with a bonus of 5 per cent., making 25 per cent. for the year ended March 31 (as for the previous year). After depreciation of £161,182 (against £137,285) and tax of £205,074 (£261,004), net profits were £477,210 (£479,511 for 1948-49). The general reserve receives £400,000 (£282,543), and £204,639 (£230,554) is to be carried forward.

Hurst, Nelson & Co. Ltd.—The profits for the year ended March 31 of Hurst, Nelson & Co. Ltd. were £46,586 (against £37,700 for eight-and-a-half months for the preceding year). Taxation amounted to £45,237 (against £36,354 for eight-and-a-half months), and deferred repairs £14,500 (£6,000). The directors have proposed a final ordinary dividend of 5 per cent., making 15 per cent. for the year (12½ per cent. for eight-and-a-half months), and in addition a capital profit distribution of £30,000, equivalent to 1*s*. 6*d*. per ordinary share, not subject to tax.

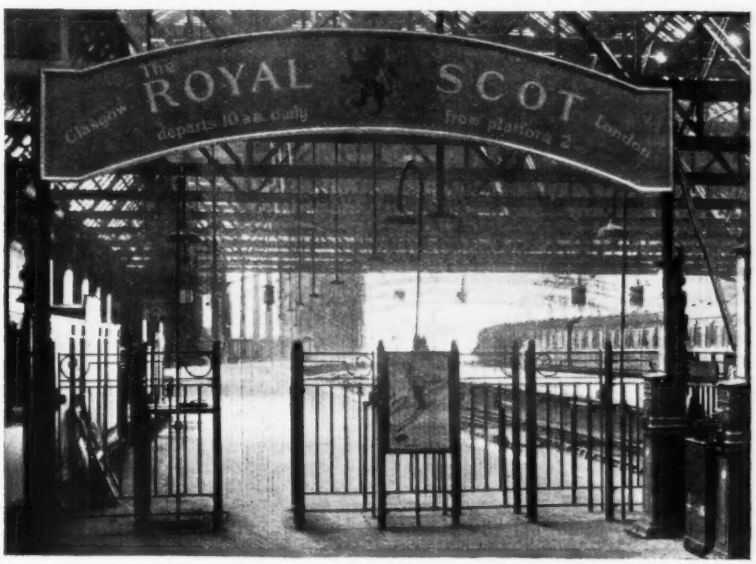
London Transport Ambulance Centre.—A presentation of first-aid awards was held by the London Transport Ambulance Centre at the Albert Stanley Institute, Hammersmith, on June 5, and was accompanied by a variety concert. The presentation was made by Lord Latham, Chairman, London Transport Executive, and President of the London Transport Ambulance Centre, who gave a brief history of the formation of the centre, and its objects. Some 300 awards gained recently were presented, as well as a number of special awards, team plaques, and certificates for the furtherance of first-aid and for meritorious first-aid rendered. In passing a vote of thanks to Lord Latham, Dr. L. G. Norman, Chief Medical Officer, and a Vice-President of the Centre, spoke of the interest taken by Lord Latham in first-aid. Mr. Alex. J. Webb, General Superintendent, Staff & Training, Railways, and Chairman of the Centre, presided at the function and was supported by the Vice-Chairman of the Centre, Mr. T. T. Shephard, Rolling Stock Engineer (Road Services).

Railway Benevolent Institution.—At a meeting on June 21 the Board of this Railway Benevolent Institution granted annuities to seven widows and six members amounting to £224 13*s*. a year and authorised 34 grants amounting to £417 from the special benevolent fund in cases of immediate necessity. Grants made from the casualty fund during May, 1950, amount to £596 17*s*.

Platform Indication Boards, Scottish Region.—With the introduction of the summer train services this month the locomotive hauling the "Royal Scot" express between Glasgow and London was fitted with a new headboard embodying the Scottish Lion on a yellow shield above the name the "Royal Scot." At the same time a colourful arch-type sign was erected at Glasgow Central Station over the barrier of Platform 2—the traditional departure platform for important long-distance services to the south. This special sign, which also incorporates the Scottish Lion motif, directs passengers to the "Royal Scot."

Nitrate Railways.—The directors of the Nitrate Railways announce that due to legal difficulties in connection with the reduction of capital resolved upon at the meeting of September 14, 1949, it will be necessary to convene a further meeting to pass fresh resolutions. There is no progress in the negotiations with the Chilean Government and, as the completion of the accounts will again be delayed, they propose to postpone the annual meeting till later in the year. They have declared, in respect of 1949, an interim and final dividend of 1¼ per cent. on the ordinary unconverted and preferred converted ordinary shares (as for the previous year).

C. A. Parsons & Company.—In his statement circulated with the report and accounts for 1949 of C. A. Parsons & Co. Ltd., the Chairman, Sir Claude D. Gibb, attributed the rise in trading profit to much increased output, with reduced manufacturing costs as the result of extensive capital outlay on new equipment. The net profit was £407,475. The directors decided to celebrate the diamond jubilee of the works with a bonus of 6d. per ordi-



Entrance arch to "Royal Scot" departure platform at Glasgow Central (see paragraph above)

nary share, in addition to the interim dividend of 1s. per ordinary share paid in October, 1949. A final ordinary dividend is being paid of 1s. 6d. a share, less tax, making 3s., less tax, for the year.

British Railways Place Important Wagon Order.—An order, valued at £850,000, has been placed by British Railways with Charles Roberts & Co. Ltd., for the supply of 2,150 all-steel mineral wagons. These will be of a standard type and will represent part of the replacement programme for next year.

Potteries Motor Traction Company.—Increased wages were stated by Mr. Raymond W. Birch, the Chairman, Potteries Motor Traction Co. Ltd., at the recent annual general meeting, to be the main cause of increased expenditure during 1949. Their revenue was slightly higher than for the previous year. Another factor was increased fuel costs. Regarding the nationalisation of the bus industry, said Mr. Birch, it looked as if the drafters of the Transport Act, 1947, had no great faith in it, when judged by the procedure laid down. One hoped that the distinct wish of the public to have no more nationalisation would be respected and that the road passenger transport industry would be left in peace.

Excursions to Boulogne.—Since June 26 the Southern Region of British Railways has been running day excursions to Boulogne, with through bookings from London. The excursions, at 60s. return from London and 40s. return from Folkestone, are available on Mondays, Tuesdays, Wednesdays, and Thursdays until October 5. Passengers travel by the 8 a.m. boat train from Victoria, and the 10.20 a.m. service from Folkestone Harbour, which arrives at Boulogne at 11.50 a.m. Passengers must hold valid passports and comply with the necessary currency regulations. On the return journey, the steamer leaves Boulogne at 6.10 p.m., and passengers arrive Folkestone 7.40 p.m. and Victoria 10 p.m.

Bi-centenary of M. & W. Grazebrook Limited.—To celebrate the bi-centenary of M. & W. Grazebrook Limited (1750-1950) a luncheon was held recently at the Town Hall, Dudley, when the Lord Mayor of Birmingham, the principal guest, was presented by the Chairman with the Boulton-Watt 1817 blowing engine. This is to be preserved in the Department of Science in Industry of the city museum. The engine is still in working condition, and, in fact, is started up once a month, in accordance with the Will of a member of the family. The foundry now turns out castings from a few pounds to 15 tons, for machine tools, gas plant, and general engineering. Other large-scale work includes rail tank wagons, including one 40 ft. in length for Rhodesia, stator cases for hydro-electric plant, high tension switch boxes, and large tanks with lead linings for chemical works.

Forthcoming Meetings

July 1 (*Sat.*) to July 6 (*Thu.*).—Permanent Way Institution. Summer Convention at Sheffield.

July 3 (*Mon.*) to July 7 (*Fri.*).—Institution of Civil Engineers. Colonial Engineering Service Conference in London.

July 4 (*Tue.*) to July 7 (*Fri.*).—Institution of Electrical Engineers. Summer Meeting at Cambridge.

Railway Stock Market

The news from Korea caused a general reaction in stock markets where prices in all sections were marked down heavily on Monday as a precaution, particularly in the gilt-edged, foreign bond and mining sections. Falls in British Funds ranged up to 35s. in the long-dated stocks with British Transport (1978-88) £1 down at 89⅞; but as in other sections, selling was not heavy, though as was to be expected, buyers were holding off awaiting developments. Subsequently the lower prices attracted buyers in a small way and there was a moderate recovery.

Industrial shares were lower, but declines on balance generally have not exceeded more than 1s. Moreover, in the iron and steel section average losses were only 3d., and sentiment did not seem to be affected by the Schuman Plan debate in Parliament. The prevailing City view is that developments in Korea are a Russian move to destroy the growing confidence of Marshall Aid countries and check the rise in world trade. In the circumstances calmness in markets will add to confidence.

Foreign rails movement were mostly small, but moderate declines predominated due to the very limited amount of business. At the time of going to press, however, United of Havana stocks have turned steadier after their recent reaction, awaiting news of take-over developments. The 1906 debentures were 24. On the other hand, dollar stocks fell sharply with Wall Street, and Canadian Pacifics reacted to 30¼.

There was a fair amount of business in Leopoldina stocks, lower prices tending to attract buyers. The ordinary was 9¾, the 5½ per cent. preference 26¼, the 4 per cent. debentures 92 and the 6½ per cent. debentures 131. Leopoldina Terminal debentures and ordinary units were 88 and 1s. 6d. respectively. There was a fair amount of activity in San Paulo 10s. units, and the price after reacting, strengthened a little to 16s. 6d. The market view is that owing to the additional compensation claims, the price of the latter may eventually be worth at least 20s. Great Western of Brazil reacted to 142s. 6d. though it continues to be assumed that the eventual pay-out will make these shares worth at least 155s. Brazil Rail gold bonds came back to 40.

Central Uruguay ordinary remained at 10. Manila "A" debentures dropped sharply to 80 and the preference shares were lower at 6s. 9d. Mexican Central "A" bonds lost a point at 35½. Elsewhere, Nitrate Rails were steady at 76s. 3d. Antofagasta ordinary stock was 7⅛ and the preference eased to 41. Reflecting the heavy fall in Japanese bonds, Southern Manchurian Railway 5 per cents. fell 4½ to 35.

Road Transport shares kept steady, and at the time of going to press, B.E.T. deferred stock has strengthened to £470. Southdown were 113s. 9d., West Riding 63s., and Lancashire Transport 78s., Scottish Motor Traction were 13s. 10½d. "ex" the compensation distribution of Transport stock.

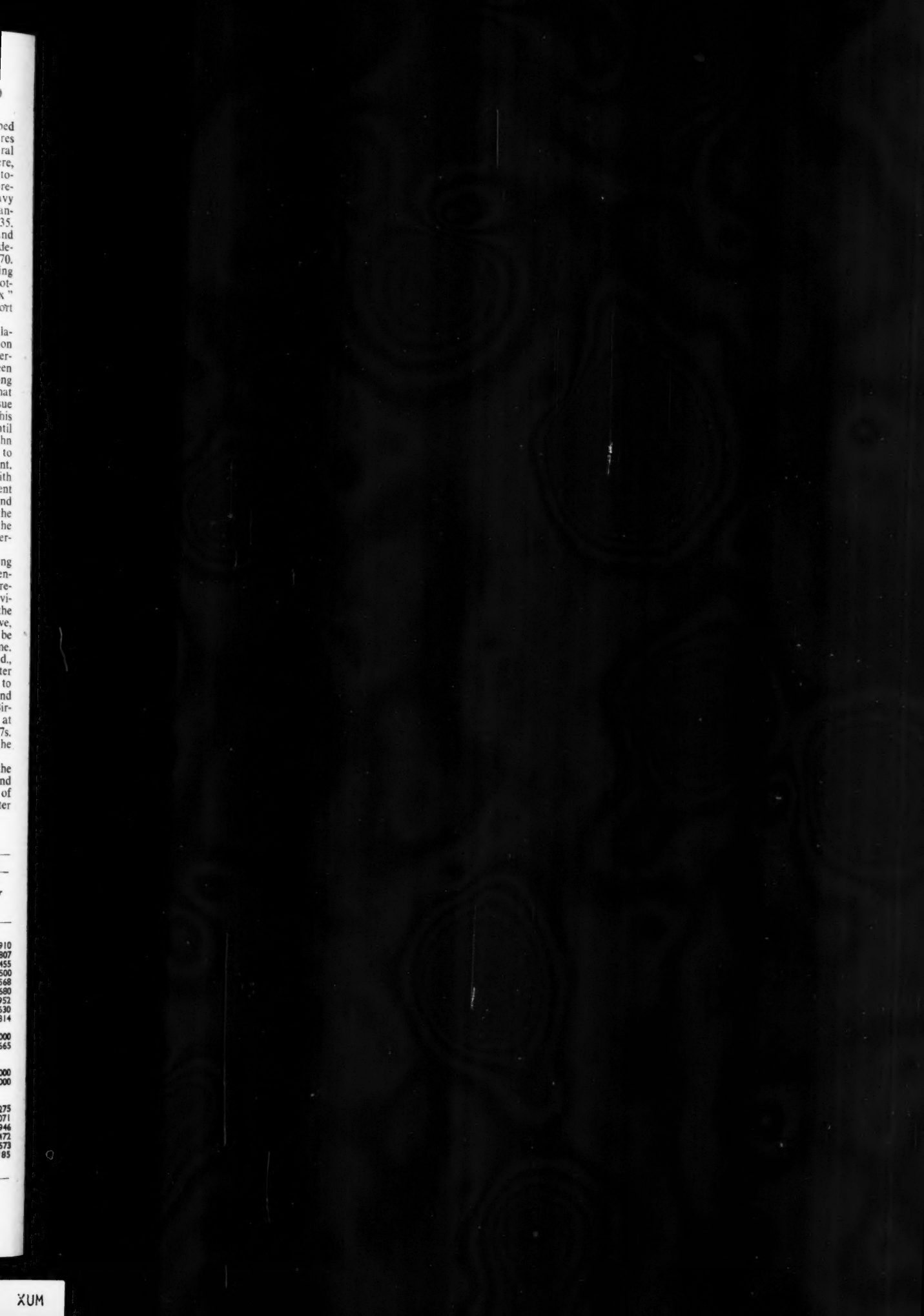
Iron and steel shares have been relatively steady, and despite the big reaction in markets earlier in the week, were generally not more than 3d. lower. Guest Keen however, lost 6d. at 45s. 6d. Dorman Long eased to 29s. 10½d., with market talk that the company is planning a debenture issue to help finance its big expansion plan. This is however, unlikely to be decided until after the expected debenture issue by John Summers, which the market continues to assume, will take the form of a 4 per cent. stock offered at slightly under par with rights of redemption at par in the event of nationalisation. Whether these and other big issues will be held up for the time being may, however, depend on the general trend of markets and on the international situation.

There has been little change among shares of locomotive builders and engineers, which remained firm generally, reflecting confidence that prospects of dividends being maintained are good and the fact that in most cases yields are attractive, and also expectation that most firms will be actively employed for some years to come. North British Locomotive were 17s. 4½d., Vulcan Foundry 19s. 6d., while Gloucester Wagon have held an earlier advance to 52s. 6d. Beyer Peacock were 22s. 3d. and Wagon Repairs 16s. 6d. Elsewhere, Birmingham Wagon were 28s. 1½d. and, at Glasgow, Hurst Nelson kept firm at 57s. on the good impression created by the financial results.

Oil shares reacted sharply earlier in the week, when Anglo-Iranian lost 3s. 9d. and Shell 2s. 6d.; but as in other sections of markets, firmer conditions developed later when buyers returned.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1948/49	No. of week	Aggregate traffics to date: Total 1949/50	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta ...	811	18.6.50	£ 49,170	— £ 19,660	24	£ 1,416,864	— £ 147,910
	Costa Rica	281	Apr., 1950	c852,959	— c156,386	43	c8,449,421	— c1,679,807
	Dorada ...	70	Apr., 1950	39,295	+ 9,554	17	165,766	+ 45,455
	Inter. Ctl. Amer. ...	794	Apr., 1950	$1,052,533	— $18,810	17	$4,831,188	+ $474,500
	La Guaira	22¾	May, 1950	$99,200	— $4,255	22	$444,361	— $111,568
	Nitrate	382	15.6.50	18,288	— 4,551	24	212,394	+ 11,680
	Paraguay Cent. ...	274	16.6.50	₲198,599	+ ₲106,785	50	£7,692,250	+ £2,493,952
	Peru Corp. ...	1,050	May, 1950	$6,674,000	+ $1,515,689	48	$64,334,058	+ $18,415,630
	" (Bolivian Section)	66	May, 1950	Bs.9,171,000	— Bs.1,225,623	48	Bs.106,682,664	+ Bs.10,536,314
	Salvador	100	Febr., 1950	c239,000	— c72,000	35	c1,300,000	— c139,000
	Talcal	154	May, 1950	15,500	+ 4,000	48	154,420	+ 54,665
Canada	Canadian National†	23,473	Apr., 1950	14,659,000	+ 1,207,000	17	53,550,000	+ 1,549,000
	Canadian Pacific† ...	17,037	Apr., 1950	9,928,000	— 118,000	17	37,654,000	— 911,000
Various	Barsi Light* ...	167	Mar., 1950	34,522	+ 3,022	52	358,762	+ 22,275
	Egyptian Delta ...	607	10.5.50	18,298	— 1,794	5	70,428	— 9,071
	Gold Coast... ...	536	Mar., 1950	258,498	— 8,915	52	2,806,753	+ 154,946
	Mid. ofW. Australia	277	Apr., 1950	32,976	+ 2,904	43	308,849	+ 18,472
	Nigeria	1,900	Jan., 1950	502,360	+ 38,978	44	5,017,814	+ 266,573
	South Africa ...	13,347	20.5.50	1,460,653	+ 4,132	10	11,047,686	+ 656,185
	Victoria	4,744	Feb., 1950	1,826,957	+ 342,160	35	—	—

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at $3 to £1